

# Maytag

Washer
Service Manual
(Covering 1994-1997 Models)

16010373 (16001145) Issued5/94 Revised8/98

# **SAFETY PRECAUTIONS**

THIS MANUAL, AS WELL AS THE INFORMATION CONTAINED IN IT, IS TO BE USED ONLY BY A MAYTAG AUTHORIZED SERVICE TECHNICIAN FAMILIAR WITH AND KNOWLEDGEABLE OF PROPER SAFETY AND SERVICING PROCEDURES AND POSSESSING HIGH QUALITY TESTING EQUIPMENT ASSOCIATED WITH MICROWAVE, GAS, AND ELECTRICAL APPLIANCE REPAIR.

ALL INDIVIDUALS WHO ATTEMPT REPAIRS BY IMPROPER MEANS OR ADJUST-MENTS, SUBJECT THEMSELVES AND OTHERS TO THE RISK OF SERIOUS OR FATAL INJURY.

USE ONLY GENUINE MAYTAG APPROVED FACTORY REPLACEMENT COMPONENTS.

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# INTRODUCTION

Each model will be covered separately in a section that pertains only to its control system and the components that make up that system. Because the basic structure for all washers is the same, they will be generally covered without regard to model.

# Model(s) covered in this manual:

LAT2300	LAT8104	LAT8904
LAT2500	LAT8234	LAT9304
LAT2914	LAT8214	LAT9314
LAT3500	LAT8204	LAT9334
LAT4914	LAT8404	LAT9604
LAT5004	LAT8434	LAT9614
LAT5005	LAT8414	LAT9634
LAT5914	LAT8421	LAT9704
LAT6914	LAT8424	LAT9734
LAT7304	LAT8504	LAT9714
LAT7314	LAT8604	LAT9804
LAT7334	LAT8614	LAT9824
LAT8004	LAT8624	LAT9904
LAT8014	LAT8704	LAW2400
LAT8024	LAT8804	LAW9304
LAT8034	LAT8824	LAW9704
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For additional information on material covered in this manual, including safety issues, contact:

Maytag Appliances Sales Company Customer Service
240 Edwards Street, S.E.
Cleveland, TN 37311

Phone: 423.472.3333

# PERSONAL SAFETY PRECAUTIONS

**Note:** As a general rule, appliance should always be disconnected from power source before attempting replacement of component parts.

This appliance must be properly grounded. Never plug the appliance into a receptacle which is not grounded adequately and in accordance with local and national codes. See installation instructions for grounding this appliance.

Appliances with the UL symbol on the data plate have been listed with Underwriters' Laboratories, Inc.: Those with a CSA Monogram on the data plate have been certified by the CSA Testing Laboratories as complying with Canadian Standards Association requirements. Nevertheless, as with any equipment using electricity and having moving parts, there are potential hazards. To use this appliance safely, the operator should become familiar with the instructions for operation of the appliance and always exercise care when using it.

#### IMPORTANT SAFETY NOTICE AND WARNING

The California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65) requires the Governor of California to publish a list of substances known to the State of California to cause cancer or reproductive harm, and requires business to warn customers of potential exposures to such substances.

Users of this appliance are hereby warned that the burning of gas can result in low-level exposure to some of the listed substances, benzene, formaldehyde and soot, due primarily to the incomplete combustion of natural gas or liquid petroleum (LP) fuels. Exhaust ducts should be kept free of obstructions and properly exhausted dryers will minimize exposure.

# **SECTION 1. GENERAL INFORMATION**

# **SPECIFICATIONS**

	MAYTAG WASHER SPECIFICATIONS					
CAPACITY 2.5 Cu. Ft.						
MAX. AMPERAGE DRAW	Washer - 7 amps (except for motor starting surges)					
WATER USAGE	• EX-Large 40 Gal. (33 lmp.); 151 lit.					
(Complete Cycle, All Models)	• Large 36 Gal. (30 lmp.); 136 lit.					
All Models)	Medium 32 Gal. (27 Imp.); 121 lit.					
	• Small 28 Gal. (23 Imp.); 106 lit.					
	• Ex-Small 24 Gal. (20 lmp.); 91 lit.					
	● Mini – 18 Gal. (15 Imp.); 68 lit.					
MOTOR	1/2 H.P.; 120 volt; 60 Hz reversible, thermoprotected against overload; automatic reset. Use Standard 15 amp fuse.					
	Single speed: Models LAT5005					
	Fabric-Matic: Models LAT7304, LAT9304					
	• Two speed: Models LAT9604, LAT9704, LAT9804, LAT9824, LAT9904					
	The washer control will be capable of controlling either a 120 volt @ 60 Hz three-wire washer, or a 240 volt @ 50 Hz two-wire washer.					
POWER USAGE	0.1 - 0.17 kwh depending on cycle					
HOSE LENGTHS	Inlet 5 feet, (1.52 m). Drain 4 feet, (1.22 m).					
INSTALLATION	Hot and cold connections with water pressure within 30-120 p.s.i. (2.11-8.44kg/cm) range; 120°F. to 140°F. hot water; a drain; 120 volt, 60 Hz electrical outlet properly grounded and protected by a 15 amp fuse or circuit breaker.					
APPROX. WEIGHT	Crated - 225 lbs. (102 kg); Uncrated - 200 lbs. (91 kg).					

WASHER FEA- TURES	LAT9904	LAT9824	LAT9804	LAT9704	LAT9604	LAT9304	LAT7304	LAT500
Capacity	Super	Super	Super	Super	Super	Super	Large	Large
Automatic Presoak Cycle	х	х	х	х			-	
Knits/Delicate Cycle	х	х	х	х	Х	Х	х	- <u>- ,,,,</u>
Permanent Press Cycle	х	х	х	х	х	х	х	Х
Speed Combina- tions	4	2	2	2	Fabric-Matic®	Fabric-Matic®	1	<del></del> -
Temperature Selections	Thermostatic Control	7	7	4	4	3	3	3
Water Levels	5	Infi- nite	Infi- nite	Infi- nite	4	4	Infi- nite	2
Extra Rinse Option	×	Х	х					
Bleach Dispenser	х	Х	х	х				
Self-Cleaning Lint Filter	х	х	х	х	х	х	х	
Fabric Softener Dispenser	х	х	х	х	x	х	х	Х
Water-Saver Available*				X		х		
White Porcelain Tub	х	Х	х	х	x	х	х	
Sound Insulating Quiet-Pak™	х	х	х	х				
Models Available in Export Voltage/Hertz				240/50		240/50	240/50	240/50
* Water-Saver mode	ls are equipped w	ith manual	-clean lint f	ilters.	1			
Maytag reserves the						<del></del>		

# PRE-INSTALLATION CONSIDERATIONS

Proper installation is the responsibility of the purchaser.

Checkpoints for proper installation:

- Properly Grounded Electrical Outlet is required.
- Standpipe Drain System must be able to accept 1 1/2" O.D. drain hose. Standpipe height of 36" is recommended.

Note: Unit is not designed to pump efficiently if standpipe is in excess of 4 feet.

- Hot and Cold Water Faucets must be within 4 feet of the back of the washer.
- Laundry Tub Drain Systems (for use with Water-Saver Models only). Tub capacity to hold a minimum of 21 gallons.
- Water Heater set to deliver 140°F. (60°C) hot water to the washer.
- Protection from weather: do not store or operate washer below 60°F (15 °C).

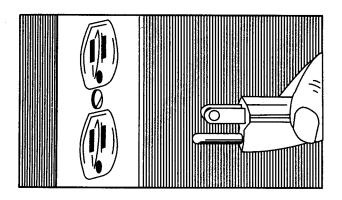
# **ELECTRICAL REQUIREMENTS**

**NOTE:** Wiring diagrams are located inside the control panel.

# OBSERVE ALL NATIONAL ELECTRICAL CODES AND LOCAL CODES AND ORDINANCES

A 120 VOLT, 60 Hz, 15 ampere fused electrical supply is required. An individual branch (or separate) circuit serving only this appliance is recommended. **NEVER USE AN EXTENSION CORD** 

This washer is equipped with a power cord.



# Export Models - 50 HZ and 60 HZ

A washer must be used on the voltage and frequency it was designed for. It should be operated on an individual branch circuit and fused by no less than a 15 amp fuse or circuit breaker on 220-240 volt units. Export models may required the addition of a plug on the power cord. It is the responsibility of the installer to assure that this has been done properly, check the data plate to be sure of voltage and line frequency requirements.

## **GROUNDING REQUIREMENTS**

# ELECTRICAL GROUND IS REQUIRED ON THIS APPLIANCE

BEFORE OPERATING OR TESTING, follow grounding instructions in Grounding Section.

#### WARNING -

To prevent unnecessary risk of fire, electrical shock or personal injury, all wiring and grounding must be done in accordance with the National Electrical Code, ANSI/NFPA, No. 70, Latest Revision (for the United States) or the Canadian Electrical Code CSA C22.1 (for Canada) and local codes and ordinances. It is the personal responsibility and obligation of the appliance owner to provide adequate electrical service for this appliance.

**EXPORT:** Specific grounding instructions must be determined due to variation of electrical services.

## **Grounding Instructions**

This appliance must be grounded. In the event of malfunction or breakdown, grounding will reduce the risk of electrical shock by providing a path of least resistance for electric current. This appliance is equipped with a cord having an equipment-grounding conductor and a grounding plug. The plug must be plugged into an appropriate outlet that is properly installed and grounded in accordance with all local codes and ordinances.

#### DANGER -

Improper connection of the equipment-grounding conductor can result in a risk of electric shock.

Check with a qualified electrician OR SERVICEMAN if in doubt as to whether the appliance is properly grounded.

Do not modify the plug provided with the appliance. If it will not fit the outlet, have a proper outlet installed by a qualified electrician.

# ADDITIONAL GROUND PROCEDURE-WHERE LOCAL CODE PERMITS.

An external ground wire, clamp and screws are provided for assistance in meeting local codes. Where approved, it is recommended this additional ground be installed. A proper external ground connection **must** be determined prior to wire hookup. Consult local building officials and qualified electrician in the event any questions exist.

NEVER CONNECT GROUND WIRE TO PLASTIC PLUMBING LINES, GAS OR HOT WATER PIPES. ALL GROUNDING AND WIRING MUST BE DONE IN ACCORDANCE WITH NATIONAL AND LOCAL CODES.

## **Grounding & Polarity**

The receptacle used for all Maytag products operating on 120 VAC must be properly grounded and polarized.

The power cord used on the appliances is equipped with a three (3) prong polarized grounding plug for protection against electrical shock and should be plugged directly into a properly grounded and polarized receptacle.

# Never cut or remove the grounding prong from this plug.

It is the responsibility of the person installing the appliance to assure it is adequately grounded and polarized at the point of installation taking into consideration local conditions and requirements. In cases where only a two (2) prong receptacle is available, it is the personal responsibility of the customer to have it replaced with a properly grounded and polarized 3 prong receptacle. All grounding and wiring should be done in accordance with national and local codes.

Insure That the Wall Outlet is Properly Polarized and Grounded.

#### **Water Pressure**

Water pressure of 30-120 p.s.i. is required to correctly fill the washer to the proper levels. Pressures of less than 30 p.s.i. may cause a failure to the water valve. The valve might not shut off completely causing an extended or exceptionally long fill time.

Water inlet hoses packed with the washer are 5' long. If longer or extension hoses are needed, these are available through Maytag Customer Service.

#### **WARNING** -

TO AVOID THE POSSIBILITY OF WATER DAMAGE, SHOULD A HOSE LEAK, ALWAYS HAVE FAUCETS ACCESSIBLE AND TURN OFF FAUCETS WHEN WASHER IS NOT IN USE.

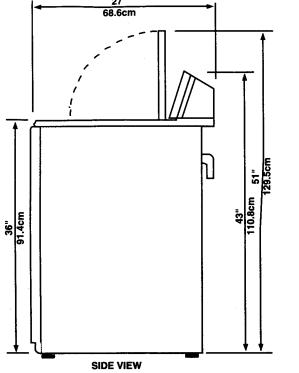
#### Water Temperature

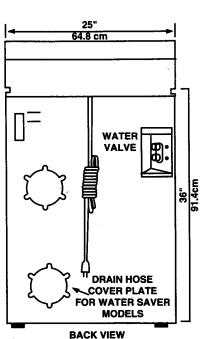
**COLD** - Same as cold water faucets deliver.

**HOT** - Same as hot water faucets deliver.

WARM - Any warm setting may vary in temperature depending on existing temperatures of the hot and cold water. Warm water is also a mixture dependent of the pressure of both hot and cold water supplies. This means warm water temperature is NOT thermostatically controlled and can vary in temperature range.

#### **Cabinet Dimensions**





#### **Drain Facility**

Recommended height of standpipe is 36". Standpipe must be large enough to accept a 1 1/2" outside diameter drain hose.

**Note:** Unit is not designed to pump efficiently if standpipe is in excess of 4 feet.

Standard automatic washers are equipped with a built-in siphon break. Water Saver models are not equipped with a siphon break so the drain hose must be elevated to height of 36". Preferably a 36" high standpipe is recommended. On installations where the drain hose cannot be conveniently elevated to 36" an accessory Siphon Break is available.

# WITHOUT THE 36" HIGH ELEVATION OR A SIPHON BREAK, WATER MAY RUN OUT OF THE WASHER PREMATURELY.

Should the washer fill and drain at the same time, this would indicate that the drain hose has not been elevated to the proper height. Drain facilities must be capable of handling a 1 1/2" outside diameter drain hose.

#### **WATER-SAVER MODELS**

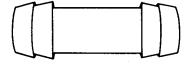
The diverter valve is located in the lower left-hand corner on the backside of the washer.

The suds hose (hose with long gooseneck) connects to the top diverter valve outlet. The other end of the hose is cut at an angle to prevent sediment from returning to the washer. Place suds hose into a 21 gallon minimum capacity storage tank. This hose must be in a straight line to the storage tank and be able to reach the bottom of the

tank. Secure the hose to the tank to prevent the hose from coming out.

The drain hose is connected to the bottom diverter valve outlet. The other end goes into the standpipe. If a 36" standpipe is not available, a siphon break must be installed to elevate the drain hose. Hold the siphon break in place (where it will be secured to back of washer) and cut the drain hose. Assemble the drain hose to the siphon break open end with clamp. The closed end of the siphon break points up. Mount the siphon break and drain hose going to drain facility with clamp and screw through hole provided at upper left side on back of washer.

If the drain hose needs to be extended to reach the drain facility, attach the extension hose section to the siphon break using a coupler.



Do not extend gooseneck end or cut gooseneck end off. Be sure each section of hose is securely pushed over the ends of the coupler and should join at approximately the middle of the coupler.

Now that the drain hose is elevated 36" with the siphon break, it can go into a floor drain or low standpipe.

#### **ALL MODELS**

**Note:** CAUTION MUST ALWAYS BE EXERCISED TO AVOID "KINKING" THE DRAIN HOSE. For best performance the

drain hose should not be restricted in any way, through elbows, coupling or excessive lengths. All unnecessary drain hose should be cut off to avoid restrictions.

### Flooring

For best performance the washer must be installed on a solid floor. Wood floor constructions may sometimes need to be reinforced to minimize vibration from unbalanced load situations. Carpets and soft tile surfaces are also contributing factors in vibration and/or tendency for a washer to move slightly during spin cycle. A special carpet installation kit is available as an accessory to provide a solid base for each leveling leg. It is composed of four small steel plates which can be "nailed" to a wooden, carpeted floor. These plates will reduce vibration between leveling leg of washer and floor surface.

NEVER install washer on a platform or weak support structure.

#### **Location Considerations**

It is recommended the washer never be installed in areas where water may freeze since the washer will always maintain some water in the water valve, pump and hose areas. This can cause damage to belts, pump, hoses and other components. Operating temperature should be above 60°F.

#### **Temperature Considerations**

Since the washer always maintains some water in the water valve, pump and hose areas, it is recommended the washer never be installed in areas where water may freeze. This can cause damage to belts pump, hoses and other components.

#### **COLD WEATHER STORAGE**

If a washer is to be stored where it would be subject to freezing conditions, the following precautions should be taken:

- 1. Turn off water supply, remove and drain inlet hoses.
- Set timer to a fill cycle and energize water valve by depressing a warm water setting. A few seconds is sufficient.
- 3. Disconnect from electrical supply.
- 4. Remove two front panel screws and remove front panel.
- 5. Remove the hose clamps and drain the water from the drain hose and pump by lowering the drain hose to floor level.

#### Lubrication

No routine lubrication or adjustments are required to maintain this product. This does not mean the product will never need attention.

#### **Finish**

The cabinet and external finishes are protected against rust to keep the product looking well for many years. As with any other piece of equipment,

cleaning and waxing maintains the beauty of these finishes.

#### CAUTION –

If "spilled" or used improperly, bleaches and other strong laundering chemicals can permanently spot or stain finishes unless wiped off immediately.

The top cover, lid and inner tub of the washer have a porcelain enamel finish. Since porcelain is actually "glass" which is bonded to metal, it is very durable. However, care should be exercised to avoid damage from objects or tools used around and in the product. Porcelain can be chipped.

#### Water Damage From Flooding

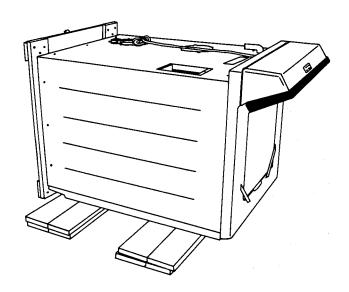
In the event the washer should be exposed to water from basement flooding, always unplug the product and have a qualified Maytag technician inspect appliance before any attempt is made to operate the unit. Never wash product inside and out with a garden hose or pressure cleaning system.

#### INSTALLATION

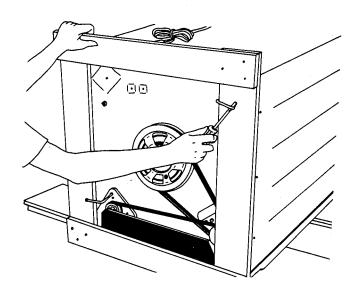
#### Instructions for Installation:

Parts and literature are packaged inside of washer tub. Lift tub block to remove items. Replace Tub Block and tape lid shut. After installation is completed be sure to remove Tub Block.

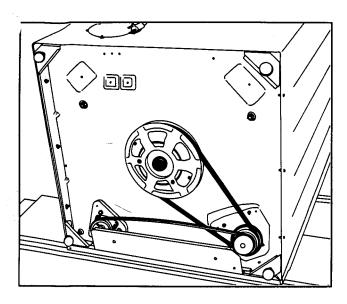
 With the tub block in place and lid taped shut, lay two of the carton corner posts on the floor. Tip washer forward on its front so it will lay across both corner posts.



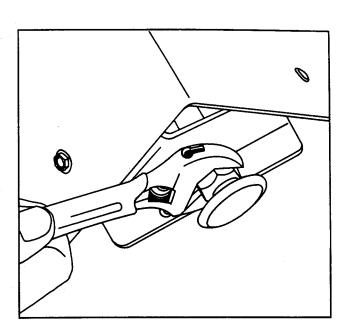
2. Remove the crate wires holding crate base to base frame. This can be done with a screwdriver.



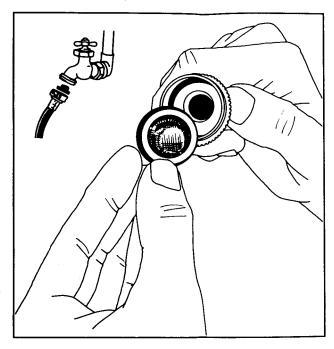
3. You now have access to all 4 leveling legs.



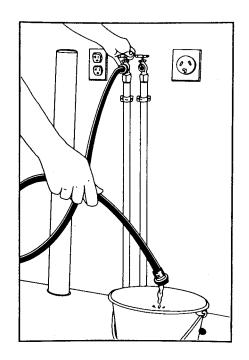
4. Loosen leveling leg locking nuts. Set washer in upright position.



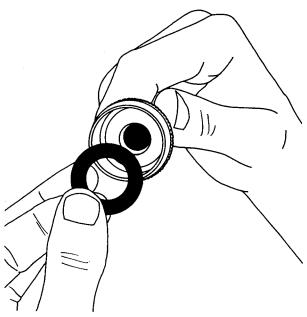
5. Place hose screen on each washer inlet hose. Screen should be pointing out to fit into faucet outlet.



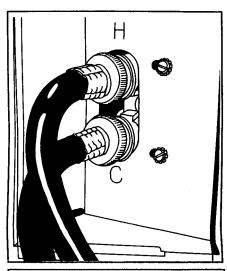
6. Connect hoses to the faucets, bleed the water lines.

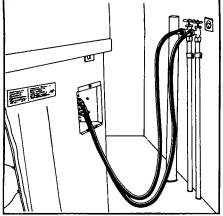


7. Insert hose washer to end of each water inlet hose.



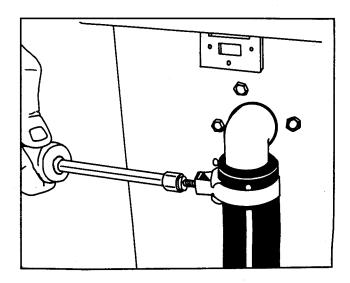
8. Connect hoses to the washer, HOT on top and COLD on bottom. Turn on water supply and check for leaks.





#### 9. Standard Models

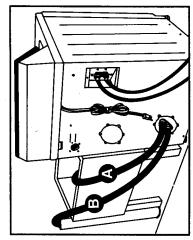
Install drain hose and clamp over siphon break tube on the back of the washer. Tighten clamp securely.



#### **Water Saver Models**

The sudshose (A) connects to the top diverter valve outlet. The other end of the hose to the storage tank.

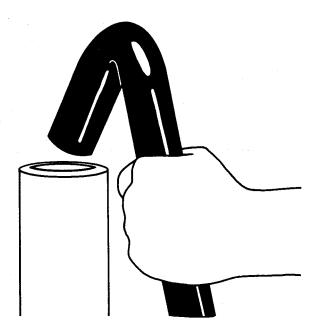
The drainhose (B) is connected to the bottom diverter valve outlet. The other end goes into the standpipe. If a 36" standpipe is not available, a siphon break (C) must be installed to elevate the drain hose. (See Drain Facility, Water Saver Models.)



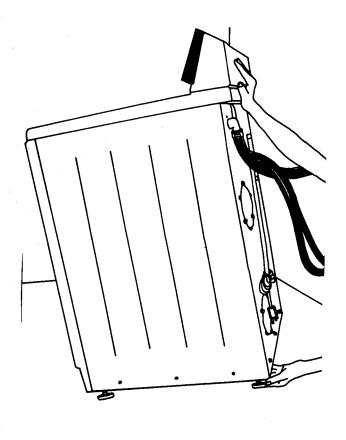




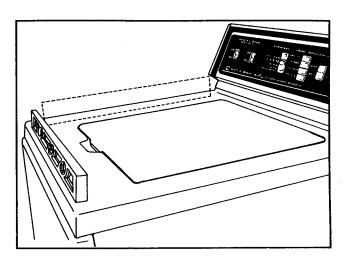
10. Place the gooseneck end of the drain hose into the standpipe.



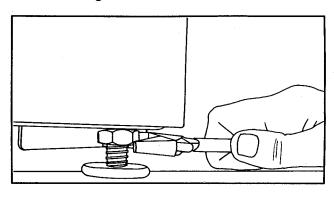
11. Prepare to put washer in place by adjusting leveling legs.



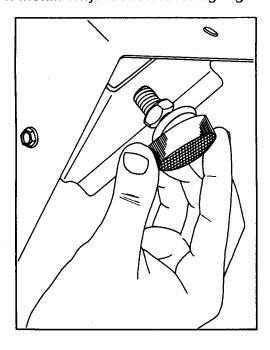
12. With a level, check washer and make necessary adjustments to leveling legs.



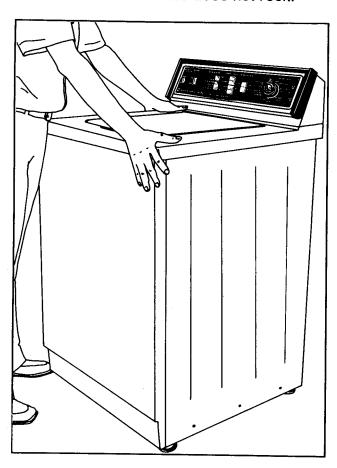
13. Once level, tighten leveling leg locking nuts with a wrench.



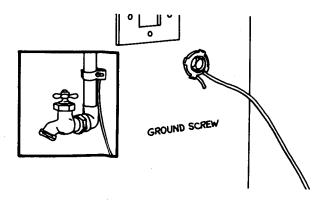
14. Install vinyl feet on leveling legs.



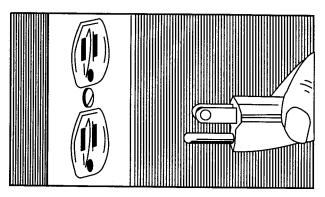
15. Check unit again with a level. Be sure that machine does not rock.



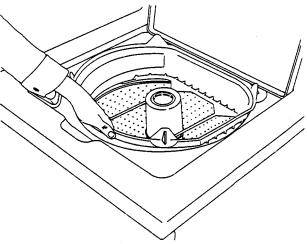
16. Connect groundwire to back of unit by using wire supplied (found in the accessory package in washer tub). Secure other end of ground wire with clamp (also in accessory package) to COLD water pipe.



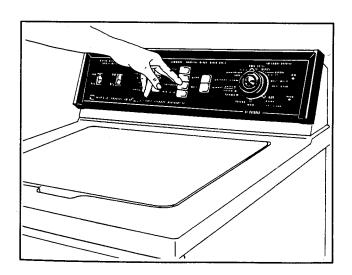
17. Plug power cord into properly grounded electrical outlet.



18. Move washer into position. Remove tape from lid. Open lid to remove tub block.



19. Check operation using check list:



#### **Check List:**

• Tub Block, accessory package and instructions have been removed from tub.

- Washer is properly grounded and plugged into a polarized electrical outlet.
- Water is turned on. Check for leaks at faucet and water valve connections.
- Drain hose is properly located into drain facility and is not kinked.
- Washer has been leveled with legs firmly on floor, leveling leg lock nuts have been tightened and vinyl feet are installed.
- Fill washer. Checking correct water temperature.
- After washer has filled, let washer agitate.
- Spin water out.

# **ELECTRICAL TEST EQUIPMENT**

The equipment required to service Maytag products depends largely upon the condition encountered. Locating a malfunction will often require the use of electrical testing equipment such as:

- Appliance Test Meter
- Clamp-on Ammeter
- Motor Test Cord

#### **Appliance Test Meter**

#### CAUTION

Always disconnect power supply before making continuity checks or taking resistance readings.

An Appliance Test Meter is a multipurpose tester combining an AC-DC voltage tester with a multi-range ohmmeter.

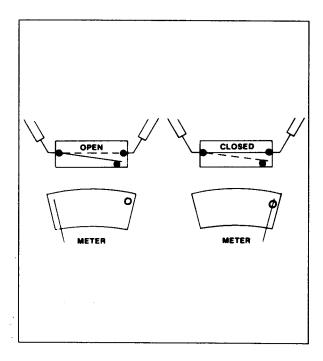


Probably the easiest means of testing electrical components is "continuity testing" with an appliance test meter. Continuity is a complete or continuous path from one point in an electrical circuit to another point.

The obvious advantages of being able to check electrical components and circuits without power applied is one of the features of the ohmmeter. Multiple ranges allow accurate determination of resistances of both single components and entire circuit paths. Resistance is measured in "ohms".

#### **SET METER FOR USE AS FOLLOWS:**

- 1. Calibrate meter by touching test probes together and turning adjusting dial until meter reads "0" on the ohm scale. Recheck calibration whenever adjusting dial for ohms settings is changed. (Replace battery if adjustment will not bring meter reading to "0".)
- 2. Select the scale most easily read and place test probes on respective terminals. When checking a switch, the reading would normally be either open or closed. A reading of 70 on the R x 10 scale would for example be 700 ohms resistance.



#### CAUTION -

Always be sure the power has been disconnected before making resistance measurements. Failure to do so will result in damage to your meter! Internal batteries provide all the power needed to make resistance checks. They should be checked at least once a year and replaced as needed.

For the most part, we will only be concerned with continuity. Is there a path or not? References are made between a "closed" (continuity) reading and an "open" (no continuity) reading. One note, when you get an "open" reading, try a higher resistance range (setting). A very high resistance appears as an "open" on the lower ranges. For best accuracy always "re-zero" meter when changing ranges and/or the physical position of the meter.

Continuity testing, as related to an electrical component, is the check of a part for an "open" or "closed" circuit.

Electrical components fall into two general categories.

- 1. LOADS Devices that use or consume electricity. Examples would include drive motor, heating elements, lamps, timer and solenoid coils.
- 2. SWITCHES Devices that control the supply of electricity to the load or loads in a circuit. Examples include door switches, timer contacts, selector switch and relay contacts.

Continuity tests of "load" devices will show varying levels of resistance from very low for some transformer and motor windings to very high for some timer motors and components on electronic control boards. Usually it is more important to know if there is a path for current flow through a device (continuity) than to know the exact resistance (ohms) of the device.

Continuity tests of switches will show virtually no resistance across closed contacts. Resistance, even low values indicates burned or dirty contacts in a switch.

Continuity testing is a process of eliminating those electrical components involved in a given function of the appliance, until the inoperative part is found. By reviewing the list of possible electrical problems under a given condition, and then performing appropriate continuity checks on the parts involved, you should be able to locate the electrical component which is inoperative.

When checking components or circuit paths for continuity, external wiring should be disconnected to eliminate false readings through external paths. Isolate what you want to test.

**Resistance Checks:** The following chart shows typical resistance values for

some of the components found on the washer.

WASHER				
Water Valve Solenoid Coil				
120 V	500 - 900 ohms			
24 V	140 - 160 ohms			
Motor Windings				
Main Winding	2 ohms			
Start Winding	4 ohms			
Motor Relay Coil (small terminals)	490 ohms			
Motor Reversion Relay Coil (small terminals)	350 ohms			

#### **Voltage Checks**

#### **CAUTION** -

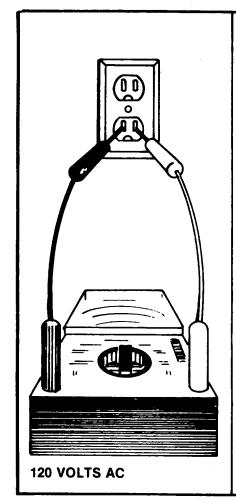
Use extreme care when checking voltage.

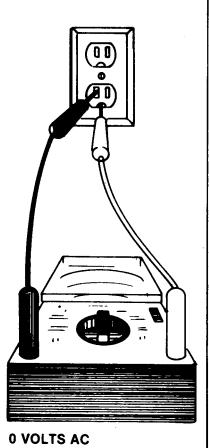
For the most part these checks will consist of taking readings at the wall receptacle in order to determine the availability of voltage to the product. Voltage checks on individual components of a product are NOT recommended due to the possibility of electrical shock. Component part testing is best accomplished through continuity checks with an Appliance Test Meter. (See section on Appliance Test Meter under ELECTRICAL TEST **EQUIPMENT** of this chapter.)

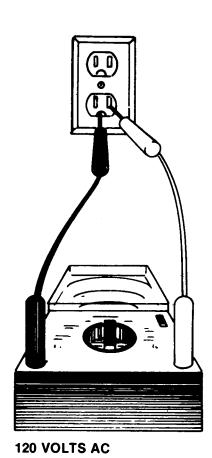
**Note:** Use of the meter on voltage higher than the indicated range may cause permanent damage to the meter. To prevent damage, first select highest range and then lower the range for readings which fall within the lower scale.

### SET UP METER FOR USE AS FOLLOWS:

- 1. Turn selector knob to desired meter function and appropriate range.
- 2. Plug black lead into socket marked (-) negative.
- 3. Plug red lead into socket marked (+) positive.
- 4. Place test leads into receptacle in order to determine voltage available.







# Using Voltmeter As A Continuity Tester

#### CAUTION -

Always disconnect power supply before making continuity checks or taking resistance readings.

While we normally think of continuity testing as only an ohmmeter function, a voltmeter can also be used, particularly when testing switch contacts. The primary difference is that power is applied to the circuit under test and appropriate caution MUST be exercised.

The voltmeter is connected across the component terminals with the wires still in place and with power disconnected.

The meter is set for the 300 volt range and power is reconnected. A voltage reading indicates a voltage drop across the component. There should be **no voltage drop** across closed switch contacts or fuses.

The voltmeter connected across thermostat terminal, as an example, will show no reading when the thermostat is calling for heat and will show line voltage when the thermostat cycles if timer is in heat cycle.

This type of continuity testing is an excellent method at locating questionable switch contacts. Any voltage drop across closed switch contacts indicates poor electrical contact. The resultant internal heating can shorten component life.

# **Using Meter For Temperature** Readings

(50°F. to 300°F.)

**Washer - Water temperature readings** are most accurate when the temperature probe is lowered partially into a full tub of water (HOT-COLD-WARM).

#### SET UP METER FOR USE AS FOLLOWS:

- 1. Turn selector knob to TEMP.
- 2. Insert black negative lead of temperature probe into black socket marked (-) negative.
- 3. Insert red positive lead of temperature probe into red socket marked (+) positive.
- 4. To calibrate meter, touch black plug from red positive lead to black negative lead and turn calibration dial until needle aligns with CAL.
- 5. Probe is ready to use read blue scale on meter face marked TEMP.

Clamp-On Ammeter



Each circuit in an appliance has a "normal" current draw which is an indication of the performance of that circuit. Current draw levels, less than or more than normal, give clues to malfunctions. The clamp-on ammeter measures these currents without breaking the circuit by measuring the strength of the magnetic field developed around each conductor. Current is read by separating the conductors and clamping the jaws of the ammeter around each conductor on which current is to be read. Low amperage readings indicate problems such as damaged heating elements, etc. High amperage readings indicate the unit being tested is operating under an increased mechanical or electrical load.

Overloads on a circuit breaker Note: or fuse can be traced to the product being tested or the circuit breaker (or fuse) by checking the product's current draw. If the amperage reading is less than the breaker reading, the breaker or fuse box is at fault.

Note: A wattmeter reading will provide better information than an ammeter as it gives a more accurate indication.

#### AMPERAGE CHART

#### WASHER

	Full Tub	6.0 amps
Spin - Start	Water in Tub	6.5 amps
Spin	Full Speed Water Out	6.0 amps

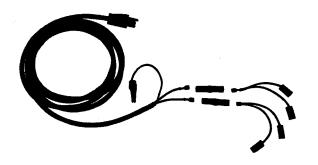
#### **VOLTAGE CHECKS WITH AMMETER**

Voltage readings may be taken by using the leads supplied with the meter. The meter is preset to read on the 0-300 VAC scale but can be dropped down to 0-150 VAC range by depressing the red button on the side of the meter.

#### **Motor Test Cord**

NOTE -

Always plug test cord into a grounded receptacle.



A motor test cord may be used to electrically check operation of the various electrical components without removing them from the unit. Testing in this manner merely determines whether or not the part will function independently of other electrical components. In order to make accurate tests, proper connection of the motor test cord is important. With the aid of the drawings under Drive Motor Test, installation of the motor test cord may be done quickly and accurately.

#### DRIVE MOTOR TEST - WASHER

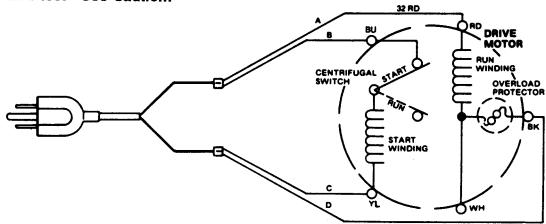
The motor may be checked in the washer or removed and checked on the bench.

Washer Single Speed - Reversible-Drive Motor

A. Live test - Use Caution.

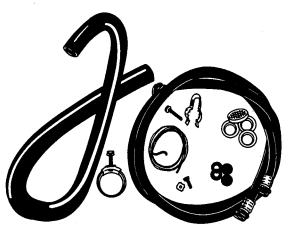
# 1. Disconnect washer power source.

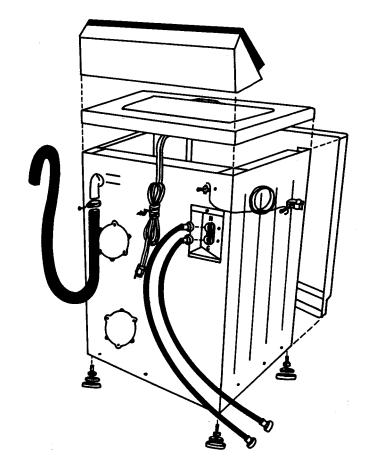
All four leads of the test cord are required to test the washer drive motor. The following drawing shows installation of the test cord on washer drive motor, (agitate cycle). Reversing the motor to spin is accomplished by reversing wires B and C.



### Parts Supplied for Installation

- Drain hose
- Drain hose clamp
- 2 Inlet hoses
- 2 Hose Washers
- 2 Hose screens
- Ground clamp & screw
- Ground screw & washer
- 4 Vinyl feet for washer legs
- Literature





# **GENERAL INFORMATION (1997) DEPENDABLE CARE**

DEPENDABLE CARE FEATURES & CYCLES	MULTI FABRIC		ALL FABRIC	2-SPEED			
reatures & Cicles	LAT5006	LAT9206	LAT9306	LAT9406	LAT9606	LAT9706	LAT9806
Capacity	Large	Super	Super	Super	Super	Super	Super
Cycles	7	7	8	9	10	14	14
Double Wash							Х
Regular		•					
Extra Heavy	X	Х	х	х	Х		
Heavy	Х	Х	Х	Х	Х	Х	Х
Normal	Х	х	Х	Х	Х	Х	Х
Light	х	Х	х	Х	Х	Х	Х
Easy Care/Permanent Press		1		***			
Heavy	х	х	х	х	х	Х	Х
Normal	х	х	х	х	Х	Х	Х
Light	х	Х	Х	·x	Х	Х	Х
Hand Washables					Х		
Delicate			•	•			
Heavy						Х	Х
Normal			Х	х	Х	X	Х
Light				Х	Х	Х	Х
Sensi/Care Normal						Х	Х
Sensi/Care Light						Х	Х
Quick Cycle						Х	Х
Soak Cycle						Х	Х
Presoak		ÎI.				Х	
Extra Rinse Option					×	Х	Х
Extra Spin Option						Х	Х
Temp Selections	3	3	3	4	4	4	7
Energy Saver							Х
Speed Combinations	1	1	1	2	2	3	4
Water Levels	3	5	5	5	Infinite	Infinite	Infinite
Bleach Dispenser			х	х	×	Х	Х
Indicator Lights						3	3
Sound Package	Quiet	Quiet	Quiet	Quiet	Quiet Plus	Quiet Plus	QP2
Type Of Control	Rotary	Rotary	Rotary	Rotary	Push Button	Push Button	Push Button
Color Availability	E	E/M	E/M	E/M	E/M	E/M	E/M

MAYTAG DEPENDABLE CARE WASHER SPECIFICATIONS						
AMPERAGE DRAW	ERAGE DRAW Maximum of 7 amps (except for motor starting surges)					
WASHER USAGE	Super - 40 Gal. (33 lmp.); 151 Liter. Large - 36 Gal. (30 lmp.); 136 Liter. Medium - 32 Gal. (27 lmp.); 121 Liter. Small - 28 Gal. (23 lmp.); 106 Liter. Mini - 24 Gal. (20 lmp.); 91 Liter. [Double Wash - Add additional fill: 19 Gal. (14 lmp.); 64 Liter. [Permanent Press - Add additional spray rinses: 3 Gal. (2 lmp.); 11 Liter.]					
MOTOR	1/2 H.P.; 120 Volt/60 Hz reversible, thermoprotected against overload; automatic reset. Use standard 15 amp fuse/circuit breaker					
POWER USAGE	0.1 - 0.17 KWH depending on cycle.					
HOSE LENGTHS	Inlet 5 feet, (1.52 m). Drain 4 feet, (1.22 m).					
INSTALLATION	Hot and cold connections with water pressure within 30-120 p.s.i. (2. 11-8.44kg/cm range; 120°F. to 140°F. hot water; a drain standpipe with minimun height of 30 - 36 inches; 120 VAC 60 Hz grounded receptacle protected by a 15 amp fuse/circuit breaker.					
APPROX. WEIGHT	Crated - 220 lbs. (91 kg); Uncrated - 180 lbs. (82 kg).					

# **LAUNDRY CYCLES:**

# **Regular Cycle**

Used for most wash loads, comprised of Extra Heavy, Heavy, Normal and Light. Duration of the cycles are:

SELECTION	SOILED ITEM	TIME (MIN.)
Extra Heavy	Heavy-work clothes, uniforms	16-18
Heavy	Heavy	13-15
Normal	Average	10-12
Light	Light	7-9

# **Easy Care/Permanent Press**

Minimizes wrinkles with a cool-down spray rinse following the wash, comprised of Heavy, Normal and Light. Duration of cycles are:

SELECTION	SOILED ITEM	TIME (MIN.)
Heavy	Heavy	10-14
Normal	Average	7-9
Light	Light	5-6

#### 2-Speed Delicate

Cycle for items requiring delicate wash action because of their construction.

SELECTION	SOILED ITEM	TIME (MIN.)
Heavy	Heavy	13-15
Normal	Average	10-12
Light/Quick	Light	7-9

#### **All Fabric Delicate**

Provides alternating periods of wash and soak.

SELECTION	SOILED ITEM	TIME (MIN.)
Normal	Average	10-12

#### **SENSI-CARE** for Hand Washables

A special cycle found on select 2-speed washers (14 cycle models) to gently and effectively wash/rinse items labeled "hand washable". The washer alternates between periods of delicate wash and soak for a total of 10 minutes. In addition, an extra rinse option may be selected for more complete removal of laundry additives at the end of the cycle. It is helpful for people with a skin sensitivity to various dyes and/or perfumes in laundry additives.

SELECTION	SOILED ITEM	TIME (MIN.)
Normal	Average	10 Approx.
Light	Light	6 Approx.

#### **Hand Washable**

Same as the **SENSI-CARE** cycle except there are no variable wash times and no extra-rinse option available. Found on 10 Cycle, 2 speed washers.

#### **Double Wash**

Virtually eliminates the need for pretreat products while providing comparable stain removal performance. Granular or liquid laundry detergent is placed in the bottom of the tub prior to loading clothes. Then liquid detergent is placed in the gray detergent cup on the top of the agitator for the second wash. In operation, the first tub of water will be spun out

at the end of the first wash. This will also dispense the liquid detergent for the second wash prior to the second fresh water fill.

# Super Wash

Provides up to 24 minutes of wash for very heavily soiled durable loads.

#### **Presoak**

Adds approximately 8 minutes of wash and soak to the beginning of the cycle. The timer advances from soak directly into the wash cycle without draining the tub. Saves time, detergent, water and energy. Uses only one tub of water and the user doesn't have to come back to start a wash cycle. Found on the selected Regular cycles.

## Soak Only

Designed to soak heavily soiled or stained items. (For best additive performance, the soak time should not exceed 30 minutes.) The user is able to manually advance the washer into any cycle and decide whether to drain and fill the tub with fresh water or to advance into a cycle without draining.

# Light/Quick Cycle

Provides approximately 7 - 9 minutes of wash for lightly soiled items.

#### **LAUNDRY OPTIONS:**

#### **Extra Rinse**

When selected, the rinse occurs at the end of the cycle for more complete removal of laundry additives. Helpful for individuals with skin sensitivities or those with a sudsing problem in soft water conditions.

## **Extra Spin**

Can be selected on 14 cycle, 2-speed washers to provide an additional 2 minutes of spin time at the end of the cycle for improved extraction of absorbent loads. It will be the same speed as the spin speed selected on the pushbutton.

# **Energy Saver**

Reduces the hot water usage, thus saving the customer money in water heater use. The washer's water valve will restrict the amount of incoming hot water on hot or warm wash water selection and allow slightly more cold water into the tub.

# **SECTION 2. CONTROLS**

The following charts illustrate a brief overview of each model series and the cycle functions of operation sequence. Refer to wiring diagram supplied with unit for testing.

- Agitation and soak times will vary with the number of minutes selected.
- Under certain conditions, the spray rinse may not occur.

Note: The washer will pause briefly throughout each cycle. These pauses are normal.

# A9824, A9804

PERMANENT PRESS	FINE WASH	PRE-SOAK	REGULAR FABRICS	EXTRA RINSE
Fill & Wash Cool Down Spin Agitate Spin Fill & Rinse Spin & Spray Spin	Fill & Wash Soak Agitate Spin Spin & Spray Fill & Rinse Spin & Spray Spin & Off	Fill & Wash Soak Agitate Soak	Fill & Wash Spin Spin & Spray Spin Fill & Rinse Spin & Spray Spin	Off or Fill & Rinse Spin & Spray Spin

## A8904, A8824, A8804, A6914

PERMANENT PRESS	QUICK CYCLE	PRESOAK	REGULAR FABRICS	EXTRA RINSE
Fill & Wash Cool Down Spin Fill & Agitate Spin . Fill & Rinse Spin & Spray Spin Off	Fill & Wash Spin Spin & Spray Fill & Rinse Spin & Spray Spin Off	Fill & Wash Pause Agitate Pause  SUPER-WASH (8904)  Fill & Wash	Fill & Wash Spin & Spray Spin & Spray Spin Fill & Rinse Spin & Spray Spin	Off or Fill & Rinse Spin & Spray Spin

# A9334, A8504, A8214, A8104, A8014, A7334, A3914, A2914

PERMANENT PRESS	DELICATES	INFINITE SOAK	REGULAR FABRICS
Fill & Wash Cool Down Fill & Agitate Spin Fill & Rinse Spin & Spray Spin	Fill & Agitate Pause Agitate Pause Agitate Spin Spin & Spray Fill & Rinse Spin & Spray Spin & Spray Spin Off	Fill & Wash Infinite Soak	Fill & Wash Spin Spin & Spray Spin Fill & Rinse Spin & Spray Spin

### A8434, A8404, A9614, A9604

PERMANENT PRESS	DELICATES	REGULAR FABRICS
Fill & Wash	Fill & Wash	Fill & Wash
Wash-Pause	Wash-Pause	Wash-Pause
Cool Down	Spin	Spin
Agitate	Spin & Spray	Spin & Spray
Spin	Spin	Spin
Fill & Rinse	Fill & Rinse	Fill & Rinse
Spin & Spray	Spin & Spray	Spin & Spray
Spin	Spin	Spin
Off	Off	'

# A9714, A9704, A8714, A8624, A8614, A8604, A5914

PERMANENT PRESS	DELICATES	QUICK CYCLE	SUPER-WASH (8614, 8604)	REGULAR FABRICS
Fill & Wash Cool Down Spin	Fill & Wash Spin	Fill & Wash Spin	Fill & Wash	Fill & Wash Spin
Fill & Agitate Spin Fill & Rinse	Spin & Spray Fill & Rinse Spin & Spray	Spin & Spray Fill & Rinse Spin & Spray	PRESOAK (9714, 9704, 8714, 8624, 5914)	Spin & Spray Spin Fill & Rinse
Spin & Spray Spin Off	Spin Off	Spin Off	Fill & Wash Soak Agitate Soak	Spin & Spray Spin

#### A9734

PERMANENT PRESS	DELICATES	QUICK CYCLE	INFINITE SOAK	REGULAR FABRICS
Fill & Wash Cool Down Spin Fill & Agitate Spin Fill & Rinse Spin & Spray Spin Off	Fill & Wash Spin Spin & Spray Fill & Rinse Spin & Spray Spin Off	Fill & Wash Spin Spin & Spray Fill & Rinse Spin & Spray Spin Off	Fill & Wash Infinite Soak	Fill & Wash Spin Spin & Spray Spin Fill & Rinse Spin & Spray Spin

# A9634, A8704, A8424, A8414, A4914

ERMANENT PRESS DE	LICATES INFINITE SOAK	REGULAR FABRICS
Cool Down Spin Spi I'll & Agitate Spi Ipin Fill	n & Spray & Rinse n & Spray	Fill & Wash Spin Spin & Spray Spin Fill & Rinse Spin & Spray Spin

# A9314, A9304, A8234, A8204, A8034, A8024, A8004, A7314, A7304

PERMANENT PRESS	DELICATES	REGULAR FABRICS
Fill & Wash Cool Down Fill & Agitate Spin Fill & Rinse Spin & Spray Spin	Fill & Wash Pause Agitate Pause Spin Spin & Spray Fill & Rinse Spin & Spray Spin & Off	Fill & Wash Spin Spin & Spray Spin Fill & Rinse Spin & Spray Spin

#### **WATER SAVER - LAW9704**

PERMANENT PRESS	DELICATES	QUICK CYCLE	SUDS RETURN	REGULAR FABRICS
Fill & Wash Cool Down Spin Fill & Agitate Spin Fill & Rinse Spin & Spray Spin Off	Fill & Wash Spin Spin & Spray Fill & Rinse Spin & Spray Spin Off	Fill & Wash Spin Spin & Spray Fill & Rinse Spin & Spray Spin Off	Suds Return Off	Fill & Wash Spin Spin & Spray Spin Fill & Rinse Spin & Spray Spin

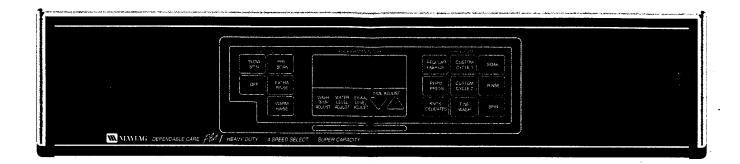
#### **WATER SAVER - LAW9304**

PERMANENT PRESS	DELICATES	SUDS RETURN	REGULAR FABRICS
Fill & Wash Cool Down Fill & Agitate Spin Fill & Rinse Spin & Spray Spin Off	Fill & Wash Pause Agitate Pause Spin Spin & Spray Fill & Rinse Spin & Spray Spin & Off	Suds Return	Fill & Wash Spin Spin & Spray Spin Fill & Rinse Spin & Spray Spin

# A5005, A5004

PERMANENT PRESS	REGULAR FABRICS	
Fill & Wash	Fill & Wash	
Wash-Pause	Wash-Pause	
Cool Down	Spin	
Fill & Agitate	Spin & Spray	
Spin	Spin	
Fill & Rinse	FILL	
Spin & Spray	Rinse	
Spin	Spin & Spray	
Off	Spin	

#### **CONTROL OPERATING INSTRUCTIONS**



Features may vary according to model

#### **LAT9904**

#### Washer Operating Instructions

Pressing one of the nine *Program* keys powers up the control, and initiates the selected program. All other washer keys are inoperable until a program selection is made. (When a pad is properly pressed, an audible tone will be heard and a red indicator will light.) The pre-programmed wash cycles automatically provide warm water washes, cold water rinses and extra large water levels.

Cycle selection can be changed while the washer is filling by pressing another cycle pad. After the fill is complete, the cycle cannot be changed. If the preprogrammed options are not appropriate for the load:

 Change the wash temperature by pressing the WASH TEMP ADJUST pad.

- Change the load size by pressing the WATER LEVEL ADJUST pad.
- Select other desired options by pressing the appropriate pads.

#### Select the Wash Program or Cycle

If a previous load has not been removed, the washer will not acknowledge the cycle selection. The word "lid" will appear in the monitor. To continue, the lid must be raised and lowered and the wash cycle reselected.

For Regular Fabrics, press the center of the "Regular" pad. After a slight pause, the washer will immediately begin filling and automatically select an "Extra Large" Water Level, Warm Wash/Cold Rinse and 10 minutes of agitation. ("10" will appear in the Digital Display.)

For Permanent Press Loads, Press the "Permanent Press" pad. After a slight pause, the washer will immediately begin filling and automatically select an "Extra Large" Water Level, Warm Wash/Cold Rinse and 8 minutes of agitation. ("Wash 8 Minutes" will appear in the Monitor.) Since this cycle features a cool down rinse to minimize wrinkling when hot or energy-saver hot wash temperatures are used.

For Knit and Delicate Loads, (delicately constructed knits, sheer fabrics, lace trimmed and embroidered items, lingerie, foundation garments, washable woolens and "Hand Washable" items) press the "Knits/Delicates" pad. After a slight pause, the washer will automatically select an "Extra Large" Water Level, Warm Wash/Cold Rinse and 6 minutes of GENTLE agitation. ("Wash 6 Minutes" will appear in the Monitor.)

## **Customized Care Cycles**

The CUSTOM CYCLE 1 and CUSTOM CYCLE 2 pads can each be programmed with a customized cycle to care for special loads.

To program, first press the desired cycle pad (Regular, Perm. Press, etc.) and make the necessary changes in wash temperature, water level, wash time, rinse selections and options. When all the selections have been made, press the custom pad and hold until a long tone is heard.

Note: The first time CUSTOM CYCLE pads are used, the pad must be held until three tones are heard followed by the long tone.) The tone(s) indicates the customized cycle has been programmed. The next time that special cycle is needed, simply press the

custom pad. The custom cycles can be changed at any time by repeating this procedure.

# **Special Cycles**

The Fine Wash cycle is designed for "hand washable" items. The washer will agitate and soak alternately for a total of 6 minutes with 2 minutes of that being a GENTLE agitation. The cycle continues with a rinse and SLOW FINAL SPIN. To select, press the FINE WASH pad. After a slight pause, the washer will fill and automatically select an Extra Large Water Level and Warm Wash/Cold Rinse. "Wash 6 Minutes" will appear in the Monitor.

For Soak Only, press the "Soak" pad. After a slight pause, the washer will immediately begin filling and automatically select an "Extra Large" Water Level, Cold Water and 30 minutes of soak with brief periods of agitation. "Soak 30 Minutes" will appear in the monitor. After the soak period, the washer will spin and drain the water. Use this program for soaking heavily soiled or stained items, without the washer advancing into a wash cycle.

The load size and water temperature can be changed by pressing the appropriate load and water temperature pads. The soak time can be decreased by pressing the 

pad.

For an extended soak period, press and hold the A pad, two dashes "--" will appear in the display during fill and agitation. The washer will shut off, continuing to soak for an indefinite length of time and will not drain. Simply press the "Spin" pad to spin and drain the tub. Generally, soak periods up to 30 minutes are sufficient for most loads.

**Note:** Allow the washer to complete the entire spin cycle (5 minutes) to avoid the next cycle beginning with a spin.

For Rinse, press the "Rinse" pad to rinse a load. After a slight pause, the washer will fill and automatically select an "Extra Large large" Water Level, Cold Water and 2 minutes of agitation. "Rinse 2 Minutes" will appear in the display.

The load size and rinse temperature can be changed by touching the appropriate Load pad or the "Warm Rinse" pad. The rinse agitation time can be increased to 8 minutes by pressing the A pad.

For Spin, press the "Spin" pad. The spin cycle is used to drain the tub or spin out a load. The washer tub will begin spinning and automatically select a 5 minute spin. "Spin 5 Minutes" will appear in the display. The spin time can be increased (up to 8 minutes) or decreased by pressing the (▲ or "MORE") or (▼ or "LESS") pad.

#### **Changing and Monitoring Programs**

You can change back and forth to any wash cycle until the washer fill is complete. A Washer Cycle Program, Load or Water selection can be changed by pressing another pad before the fill is finished. Options are selected by pressing the pad once or canceled by pressing the pad again. The ▲ or ▼ pads are pressed to lengthen or shorten a portion of a program. Pressing the "OFF" pad stops the washer and cancels all selections.

The progress of the washer program can be monitored by noting the location

of the red sequence lights for each portion of the program -- SOAK, WASH, RINSE, S-RINSE, and SPIN. The number of minutes remaining in each portion of a program appears in the Digital Display.

IMPORTANT: If a washer program is selected while the lid is open, "Lid" will appear in the display and you must raise and lower the lid and re-select wash cycle. The washer will not agitate or spin unless the lid is closed.

## **Select the Proper Water Level**

Since the "Extra Large" Water Level is automatically selected, the water level needs changed only if the load is small or medium in size. Simply press the corresponding load size pad for the appropriate water level.

Remember, for best washing results, clothes must circulate freely. If too little water is used, it may result in poor washing action, linting or wear on fabrics. Use the following as a guide to select the proper water level:

- Extra Large Use this setting when the tub is 3/4 to full of clothes.
- Large Use this setting when the tub is 1/2 to full of clothes.
- **Medium** Use this setting when the tub is 1/3 to 1/2 full of clothes.
- **Small** Use this setting when the tub is 1/4 to 1/3 full of clothes.
- Mini Less than 1/4 full of clothes.

NOTE: When laundering permanent press or delicately constructed items, washable woolens or loosely knit items, never use less than the "Medium" setting. This will minimize shrinkage, wrinkling and pulling of seams.

## **Select Water Temperature**

Household water heaters should be set to deliver a minimum of 120°F. (49°C.) water to the washer for the hot wash setting. Other temperatures options are thermostatically controlled by the washer to assure consistent temperatures, improve cleaning and save energy.

**Note:** Water below 65°F. is too cold to dissolve and activate granular laundry detergents.

A Warm Wash/Cold Rinse is automatically selected with all wash cycles. The water temperature can be changed by pressing the WASH TEMP ADJUST pad. There are five temperatures available as indicated by the thermometer symbol in the Monitor. They are:

- HOT
- ENERGY SAVER HOT
- WARM
- ENERGY SAVER WARM
- COLD

## **Select Wash Time**

The wash time can be increased or decreased on any cycle by pressing the ▲ pad to increase the time; or ▼ pad to decrease the time, until the fill is complete. The minutes of agitation will count up or down one minute at a time in the display.

Regular Fabrics Permanent Press Delicate Knits Fine Wash Soak Rinse Spin	1-19 Minutes 1-15 Minutes 1-10 Minutes 1-10 Minutes 1-59 Min./Infinite 1-08 Minutes 1-08 Minutes
Presoak	1-60 Minutes

The amount of time chosen will be displayed for approximately 10 seconds in the Monitor when a cycle is first selected.

Then the **Time Monitor** will convert to the approximate total minutes remaining in the cycle.

## Select Options (if desired)

Options are selected by pressing the pad once or canceled by pressing the pad again.

#### Slow Spin

Pressing this pad provides a slow spin speed on any cycle selected.

#### Off

Pressing this pad cancels all selections and stops the washer.

Automatic Presoak is ideal for heavily soiled or stained loads of Regular, Permanent Press or Delicate items. It will soak with brief periods of agitation for a selected time and automatically advance into a wash cycle without draining.

#### To use this option:

- 1. Select a Wash cycle.
- 2. Choose the load size, water temperature and wash time.
- 3. Press the "Presoak" pad. (The presoak temperature will be the same as the wash temperature.)
- 4. Adjust the presoak time down to increase or decrease by pressing one of the time adjust pads.

Cancel the presoak option by pressing the pad a second time.The indicator light will also go out.

#### **Extra Rinse**

An additional deep rinse is automatically added to the selected cycle by using the EXTRA RINSE option. To select, press the EXTRA RINSE pad. The water temperature will be the same as the initial rinse.

#### **Warm Rinse**

Pressing this pad will provide a warm final rinse when energy saver hot, warm or energy saver warm water temperatures are selected. A warm final rinse cannot be provided on a permanent press cycle or when using a hot or cold wash temperature on any cycle.

#### Start the Washer

After a wash cycle program has been selected, the washer will fill to the selected water level with the selected wash water temperature. After filling, it will agitate for the selected number of minutes.

The washer will pause briefly throughout each cycle. These pauses are normal.

This washer is designed so that it will not agitate or spin when the lid is open. It will, however, fill with the lid open so water is available for pretreating stains or diluting fabric softener.

Should the lid be opened during a cycle, the washer will stop; when the lid is closed, the washer will resume it's cycle at the point it was interrupted.

# **Program Monitor Features**

Unbalanced Signal If the washer becomes unbalanced, "UNBALANCED" will light in the Monitor. One minute later an audible signal will sound. This signal will continue to sound every minute. To continue the cycle, redistribute the load and close the lid. The washer will automatically resume the cycle at the point it was interrupted.

## **Sequence Indicators**

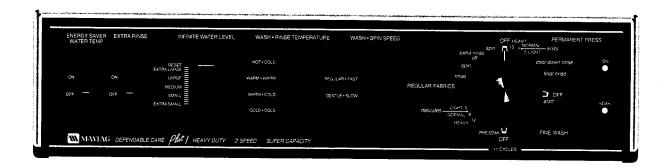
Words light in the Monitor as the washer advances through each portion of the cycle - "Soak, Wash, Rinse, X-Rinse and Spin."

The following display symbols indicate:

#### Soil Level Indicators

The soil level indicators will light in the Monitor to help match the wash time to the soil level of the load. For example, if the load is lightly soiled, agitation time can be decreased and fewer indicator lights will light indication appropriate agitation time for the load.

# LAT9824 • LAT9804 • LAT8904 • LAT6914



Features may vary according to model

## **Select Options**

# **Energy Saver Water Temperature**

Pressing the ENERGY SAVER switch to "ON" will decrease the water temperature, minimizing water heating costs. For more information see "Select Wash/Rinse Water Temperature" below.

#### Extra Rinse

Additional deep rinse is automatically added to Regular Fabric loads by using the EXTRA RINSE option. Press the EXTRA RINSE switch to the "ON" position before the cycle begins. The washer will add a second rinse and spin to the cycle. The water temperature will be the same as the initial rinse.

## Wash/Spin Speed

By pressing the appropriate button, the wash and spin speeds can be adjusted to fit the washing requirements of the load.

- REGULAR/FAST
- REGULAR/SLOW

- GENTLE/SLOW
- GENTLE/FAST (Not on all Models)

#### Select Water Level

Move the infinite slide lever up or down to Extra Small, Small, Medium, Large, Extra Large, or any point in between. If more water is needed once the fill is complete, move the lever all the way up to Reset, then move it to the desired setting.

Remember, for best washing results, clothes must circulate freely. If too little water is used, it may result in poor washing action, linting or wear on fabrics. Use the following as a guide to select the proper water level:

- Extra Large Use this setting when the tub is 3/4 to full of clothes.
- Large Use this setting when the tub is 1/2 to 3/4 full of clothes.
- **Medium** Use this setting when the tub is 1/3 to 1/2 full of clothes.
- Small Use this setting when the tub is 1/4 to 1/3 full of clothes.

• Extra Small - Less than 1/4 full of clothes.

NOTE: When laundering permanent press or delicately constructed items, washable woolens or loosely knit items, never use less than the "Medium" setting. This will minimize shrinkage, wrinkling and pulling of seams.

#### **Select Wash/Rinse Water Temperature**

**Note:** Household water heaters should be set to deliver a minimum of 120°F. (49°C.) water to the washer for the hot wash setting.

**Note:** Water below 65°F, is too cold to dissolve and activate granular laundry detergents.

Press the appropriate button to select the water temperature desired.

- HOT/COLD
- ENERGY SAVER HOT/COLD
- WARM/WARM
- ENERGY SAVER WARM/WARM
- WARM/COLD
- ENERGY SAVER WARM/COLD
- COLD/COLD

#### Select Cycle and Time

Push in the cycle control knob and turn clockwise to the proper cycle and wash time.

# Washing:

The HEAVY cycle is designed to wash very soiled loads, the NORMAL cycle is for average soiled loads and the LIGHT cycle should be selected for slightly soiled loads.

For **Regular Fabric** loads, turn the control knob to 12 minutes for a Heavy cycle; to 8 minutes for a NORMAL cycle; and to 5 minutes for a LIGHT cycle.

The **Superwash** cycle (not on all models) provides additional wash time for regular fabric loads. It will add approximately 6-8 minutes of agitation to the cycle. To select, turn the control knob to SUPERWASH.

For **Delicates**, turn the control knob to "Delicates" on REGULAR FABRICS and select GENTLE/SLOW speed.

For **Permanent Press** loads, turn the control knob to 10 minutes for a HEAVY cycle; to 7 minutes for a NORMAL cycle; and to 5 minutes for a LIGHT cycle.

For **Knits**, turn the control knob to "Knits" on PERMANENT PRESS and select REGULAR/FAST speed. If the knit items are loosely woven, select GENTLE/SLOW speed.

The Quick Cycle (not on all models) reduces the cycle time by using a 6 minute wash and a shorter first spin and rinse. Total cycle time is approximately 16 minutes plus fill times. To select, turn the control knob to start. (Recommended for lightly soiled items).

The **Fine Wash** cycle (not on all models) is designed for "handwashable" items. The washer will agitate and soak alternately for a total of 6 minutes and move to the rinse and final spin. Turn the control knob to start and select GENTLE/SLOW speed. A liquid detergent is recommended when using this cycle.

## Presoaking:

The Automatic Presoak cycle (not on all models) moves from the presoak into the "HEAVY" regular fabric cycle automatically. Since the presoak and the wash are done in one tub of water, it saves water and energy. A hot water presoak is recommended for heavily soiled items.

To use the AUTOMATIC PRESOAK cycle, turn the control knob to PRESOAK. The washer will soak for approximately 10 minutes (this includes periods of agitation) then move directly into 12 minutes of wash without draining and refilling.

#### Start the Washer

Pull out the cycle control knob to start the washer. It will fill to the selected water level with the selected wash water temperature. After filling, it will agitate for the selected number of minutes.

The washer will pause briefly throughout each cycle. These pauses are normal.

This washer is designed so that it will not agitate or spin when the lid is open. It will, however, fill with the lid open so water is available for pretreating stains or diluting fabric softener.

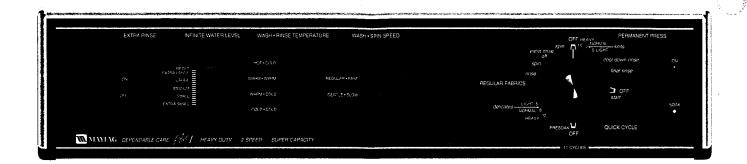
Should the lid be opened during a cycle, the washer will stop; when the lid is closed the washer will resume it's cycle at the point it was interrupted.

Note: If an unbalanced load occurs during the spin, the washer will atomically stop. If this happens, push in the control knob, wait for the tub to stop spinning, open the lid, redistribute the load, close the lid and pull out the control knob.

## Indicator Lights

# (Lights will vary according to model)

The ON light stays lit throughout the entire cycle indicating the washer is operating. The SOAK light is on during the presoak cycle. The WASH/RINSE light is on during the wash and rinse portion of all cycles. The SPIN light indicates that the washer is spinning the load. The SUPERWASH light is on until the timer advances into the Regular Fabrics HEAVY cycle.



Features may vary according to model

## Select Options

## **Energy Saver Water Temperature**

#### Extra Rinse

Additional deep rinse is automatically added to Regular Fabric loads by using the EXTRA RINSE option. Press the EXTRA RINSE switch to the "ON" position before the cycle begins. The washer will add a second rinse and spin to the cycle. The water temperature will be the same as the initial rinse.

# Wash/Spin Speed

By pressing the appropriate button, the wash and spin speeds can be adjusted to fit the washing requirements of the load.

- REGULAR/FAST
- GENTLE/SLOW

# Select Water Level

Move the infinite slide lever up or down to Extra Small, Small, Medium, Large, Extra Large, or any point in between. If more water is needed once the fill is complete, move the lever all the way up to Reset, then move it to the desired setting.

Remember, for best washing results, clothes must circulate freely. If too little water is used, it may result in poor washing action, linting or wear on fabrics. Use the following as a guide to select the proper water level:

- Extra Large Use this setting when the tub is 3/4 to full of clothes.
- Large Use this setting when the tub is 1/2 to 3/4 full of clothes.
- **Medium** Use this setting when the tub is 1/3 to 1/2 full of clothes.
- Small Use this setting when the tub is 1/4 to 1/3 full of clothes.
- Extra Small Less than 1/4 full of clothes.

NOTE: When laundering permanent press or delicately constructed items, washable woolens or loosely knit items, never use less than the "Medium" setting. This will minimize shrinkage, wrinkling and pulling of seams.

# **Select Wash/Rinse Water Temperature**

**Note:** Household water heaters should be set to deliver a minimum of 120°F. (49°C.) water to the washer for the hot wash setting.

**Note:** Water below 65°F. is too cold to dissolve and activate granular laundry detergents.

Press the appropriate button to select the water temperature desired.

- HOT/COLD
- WARM/WARM
- WARM/COLD
- COLD/COLD

## Select Cycle and Time

Push in the cycle control knob and turn clockwise to the proper cycle and wash time.

## Washing:

The HEAVY cycle is designed to wash very soiled loads, the NORMAL cycle is for average soiled loads and the LIGHT cycle should be selected for slightly soiled loads.

For **Regular Fabric** loads, turn the control knob to 12 minutes for a Heavy cycle; to 8 minutes for a NORMAL cycle; and to 5 minutes for a LIGHT cycle.

For **Delicates**, turn the control knob to "Delicates" on REGULAR FABRICS and select GENTLE/SLOW speed.

For Permanent Press loads, turn the control knob to 10 minutes for a HEAVY cycle; to 7 minutes for a NORMAL cycle; and to 5 minutes for a LIGHT cycle.

For **Knits**, turn the control knob to "Knits" on PERMANENT PRESS and select REGULAR/FAST speed. If the knit items are loosely woven, select GENTLE/SLOW speed.

The **Quick Cycle** reduces the cycle time by using a 6 minute wash and a shorter first spin and rinse. Total cycle time is approximately 16 minutes plus fill times. To select, turn the control knob to start. (Recommended for lightly soiled items).

The **Fine Wash** cycle (not on all models) is designed for "handwashable" items. The washer will agitate and soak alternately for a total of 6 minutes and move to the rinse and final spin. Turn the control knob to start and select GENTLE/SLOW speed. A liquid detergent is recommended when using this cycle.

## Presoaking:

The Automatic Presoak cycle moves from the presoak into the "HEAVY" regular fabric cycle automatically. Since the presoak and the wash are done in one tub of water, it saves water and energy. A hot water presoak is recommended for heavily soiled items.

To use the AUTOMATIC PRESOAK cycle, turn the control knob to PRESOAK. The washer will soak for approximately 10 minutes (this includes periods of agitation) then move directly into 12 minutes of wash without draining and refilling.

#### Start the Washer

Pull out the cycle control knob to start the washer. It will fill to the selected water level with the selected wash water temperature. After filling, it will agitate for the selected number of minutes.

The washer will pause briefly throughout each cycle. These pauses are normal.

This washer is designed so that it will not agitate or spin when the lid is open. It will, however, fill with the lid open so water is available for pretreating stains or diluting fabric softener.

Should the lid be opened during a cycle, the washer will stop; when the lid is closed the washer will resume it's cycle at the point it was interrupted.

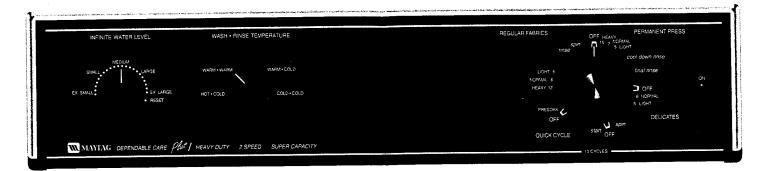
Note: If an unbalanced load occurs during the spin, the washer will atomically stop. If this happens, push in the control knob, wait for the tub to stop spinning, open the lid, redistribute the load, close the lid and pull out the control knob.

# **Indicator Lights**

# (Lights will vary according to model)

The ON light stays lit throughout the entire cycle indicating the washer is operating. The SOAK light is on during the presoak cycle.

# LAT9734, LAT9714, LAT9704, LAT8714, LAT8624, LAT8614, LAT8604, LAT5914



Features may vary according to model

#### Select Water Level

Turn the selector knob to the setting that matches the size of the load. The **pre-set** selector knob (not on all models) can be set to five distinct settings: Extra Small, Small, Medium, Large, Extra Large.

The **infinite selector knob** (not on all models) can be moved to each water level or any point in between.

If more water is needed once the fill is complete, move the knob to Reset, then move it to the desired setting.

Remember, for best washing results, clothes must circulate freely. If too little water is used, it may result in poor washing action, linting or wear on fabrics. Use the following as a guide to select the proper water level:

- Extra Large Use this setting when the tub is 3/4 to full of clothes.
- Large Use this setting when the tub is 1/2 to 3/4 full of clothes.

- **Medium** Use this setting when the tub is 1/3 to 1/2 full of clothes.
- Small Use this setting when the tub is 1/4 to 1/3 full of clothes.
- Extra Small Less than 1/4 full of clothes.

NOTE: When laundering permanent press or delicately constructed items, washable woolens or loosely knit items, never use less than the "Medium" setting. This will minimize shrinkage, wrinkling and pulling of seams.

#### Select Wash/Rinse Water Temperature

**Note:** Household water heaters should be set to deliver a minimum of 120°F. (49°C.) water to the washer for the hot wash setting.

**Note:** Water below 65°F. is too cold to dissolve and activate granular laundry detergents.

Turn the selector knob to the water temperature desired.

HOT/COLD

- WARM/WARM
- WARM/COLD
- COLD/COLD

## Select Cycle and Time

Push in the cycle control knob and turn clockwise to the proper cycle and wash time.

## Washing:

The HEAVY cycle is designed to wash very soiled loads, the NORMAL cycle is for average soiled loads and the LIGHT cycle should be selected for slightly soiled loads.

For **Regular Fabric** loads, turn the control knob to 12 minutes for a Heavy cycle; to 8 minutes for a NORMAL cycle; and to 5 minutes for a LIGHT cycle.

The **Superwash** cycle (not on all models) provides additional wash time for regular fabric loads. It will add approximately 6-8 minutes of agitation to the cycle. To select, turn the control knob to SUPERWASH.

For **Permanent Press** loads, turn the control knob to 10 minutes for a Heavy cycle; to 7 minutes for a NORMAL cycle; and to 5 minutes for a LIGHT cycle.

For **Delicates**, turn the control knob to 8 minutes for a NORMAL cycle; and to 5 minutes for a LIGHT cycle.

The Quick Cycle (not on all models) reduces the cycle time by using a 6 minute wash and a shorter first spin and rinse. Total cycle time is approximately 16 minutes plus fill times. To select, turn the control knob to start. (Recommended for lightly soiled items).

Note: The washer is automatically programmed to assure proper agitation and spinning for each load type.

REGULAR FABRIC cycles and the QUICK CYCLE will provide a fast wash/spin speed. PERMANENT PRESS will have a fast wash/spin speed along with a cool-down rinse. DELICATE cycles will have a gentle wash and slow final spin speed.

## Presoaking:

The Automatic Presoak cycle (not on all models) moves from the presoak into the "HEAVY" regular fabrics cycle automatically. Since the presoak and the wash are done in one tub of water, it saves water and energy. A hot water presoak is recommended for heavily soiled items.

To use the AUTOMATIC PRESOAK cycle, turn the control knob to PRESOAK. The washer will soak for approximately 10 minutes (this includes periods of agitation) then move directly into 12 minutes of wash without draining and refilling.

The **Soak Only** cycle (not on all models) is used to soak heavily soiled or stained items for as long as desired. The washer does **not** advance automatically into a wash cycle.

To use the SOAK cycle, turn the control knob to start. The washer will fill, agitate for approximately 3 minutes and soak until the control knob is advanced into a wash cycle or spin and drain.

## Start the Washer

Pull out the cycle control knob to start the washer. It will fill to the selected water level with the selected wash water temperature. After filling, it will agitate for the selected number of minutes.

The washer will pause briefly throughout each cycle. These pauses are normal.

This washer is designed so that it will not agitate or spin when the lid is open. It will, however, fill with the lid open so water is available for pretreating stains or diluting fabric softener.

Should the lid be opened during a cycle, the washer will stop; when the lid is closed the washer will resume it's cycle at the point it was interrupted.

**Note:** If an unbalanced load occurs during the spin, the washer will atom-

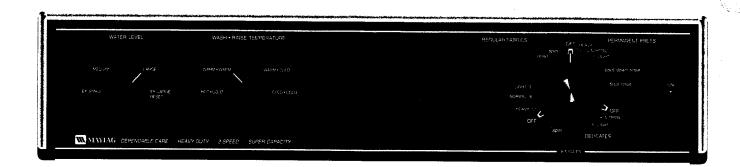
ically stop. If this happens, push in the control knob, wait for the tub to stop spinning, open the lid, redistribute the load, close the lid and pull out the control knob.

# **Indicator Lights**

## (Lights will vary according to model)

The ON light stays lit throughout the entire cycle indicating the washer is operating. The SOAK light is on during a soak cycle - soak only or automatic presoak. The SUPERWASH light is on until the timer advances into the Regular Fabrics HEAVY cycle.

# LAT9634, LAT9614, LAT9604, LAT8704, LAT8434, LAT8424, LAT8414, LAT8404, LAT4914



Features may vary according to model

#### Select Water Level

Turn the selector knob to the setting that matches the size of the load. The **pre-set** selector knob (not on all models) can be set to five distinct settings: Extra Small, Small, Medium, Large, Extra Large.

The **infinite selector knob** (not on all models) can be moved to each water level or any point in between.

If more water is needed once the fill is complete, move the knob to Reset, then move it to the desired setting.

Remember, for best washing results, clothes must circulate freely. If too little water is used, it may result in poor washing action, linting or wear on fabrics. Use the following as a guide to select the proper water level:

- Extra Large Use this setting when the tub is 3/4 to full of clothes.
- Large Use this setting when the tub is 1/2 to 3/4 full of clothes.
- Medium Use this setting when the tub is 1/3 to 1/2 full of clothes.
- Small Use this setting when the tub is 1/4 to 1/3 full of clothes.
- Extra Small Less than 1/4 full of clothes.

NOTE: When laundering permanent press or delicately constructed items, washable woolens or loosely knit items, never use less than the "Medium" setting. This will minimize shrinkage, wrinkling and pulling of seams.

#### Select Wash/Rinse Water Temperature

**Note:** Household water heaters should be set to deliver a minimum of 120°F. (49°C.) water to the washer for the hot wash setting.

#### NOTE

Water below 65°F. is too cold to dissolve and activate granular laundry detergents.

Turn the selector knob to the water temperature desired.

- HOT/COLD
- WARM/WARM
- WARM/COLD
- COLD/COLD

## Select Cycle and Time

Push in the cycle control knob and turn clockwise to the proper cycle and wash time.

## Washing:

The HEAVY cycle is designed to wash very soiled loads, the NORMAL cycle is for average soiled loads and the LIGHT cycle should be selected for slightly soiled loads.

For **Regular Fabric** loads, turn the control knob to 12 minutes for a Heavy cycle; to 8 minutes for a NORMAL cycle; and to 5 minutes for a LIGHT cycle.

For **Permanent Press** loads, turn the control knob to 10 minutes for a Heavy cycle; to 7 minutes for a NORMAL cycle; and to 5 minutes for a LIGHT cycle.

For **Delicates**, turn the control knob to 8 minutes for a NORMAL cycle; and to 5 minutes for a LIGHT cycle.

Note: The washer is automatically programmed to assure proper agitation and spinning for each load type. REGULAR FABRIC cycles will provide a fast wash/spin speed. PERMANENT
PRESS will have a fast wash/spin speed
along with a cool-down rinse. DELICATE cycles will have a gentle wash
and slow final spin speed.

## Presoaking:

The **Soak Only** cycle (not on all models) is used to soak heavily soiled or stained items for as long as desired. The washer does **not** advance automatically into a wash cycle.

To use the SOAK cycle, turn the control knob to start. The washer will fill, agitate for approximately 3 minutes and soak until the control knob is advanced into a wash cycle or spin and drain.

#### Start the Washer

Pull out the cycle control knob to start the washer. It will fill to the selected water level with the selected wash water temperature. After filling, it will agitate for the selected number of minutes.

The washer will pause briefly throughout each cycle. These pauses are normal.

This washer is designed so that it will not agitate or spin when the lid is open. It will, however, fill with the lid open so water is available for pretreating stains or diluting fabric softener.

Should the lid be opened during a cycle, the washer will stop; when the lid is closed the washer will resume it's cycle at the point it was interrupted.

**Note:** If an unbalanced load occurs during the spin, the washer will atomically stop. If this happens, push in the control knob, wait for the tub to stop

spinning, open the lid, redistribute the load, close the lid and pull out the control knob.

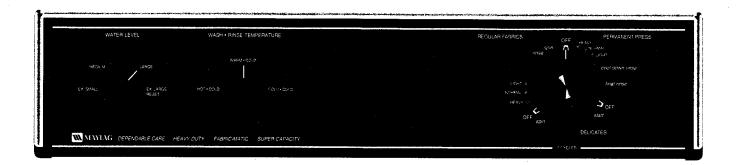
**Indicator Lights** 

(Lights will vary according to model)

Depending on the model, the washer will have either a SOAK light or an ON

light. The ON light stays lit throughout the entire cycle indicating the washer is operating. The SOAK light is on during a soak cycle.

# LAT9334, LAT9314, LAT9304, LAT8504, LAT8234, LAT8214, LAT8204, LAT3914



Features may vary according to model

#### Select Water Level

Turn the selector knob to the setting that matches the size of the load. The **pre-set** selector knob (not on all models) can be set to five distinct settings: Extra Small, Small, Medium, Large, Extra Large.

The **infinite selector knob** (not on all models) can be moved to each water level or any point in between.

If more water is needed once the fill is complete, move the knob to Reset, then move it to the desired setting.

Remember, for best washing results, clothes must circulate freely. If too little water is used, it may result in poor washing action, linting or wear on fabrics. Use the following as a guide to select the proper water level:

- Extra Large Use this setting when the tub is 3/4 to full of clothes.
- Large Use this setting when the tub is 1/2 to 3/4 full of clothes.

- **Medium** Use this setting when the tub is 1/3 to 1/2 full of clothes.
- Small (Not on all models) Use this setting when the tub is 1/4 to 1/3 full of clothes.
- Extra Small Less than 1/4 full of clothes.

NOTE: When laundering permanent press or delicately constructed items, washable woolens or loosely knit items, never use less than the "Medium" setting. This will minimize shrinkage, wrinkling and pulling of seams.

# **Select Wash/Rinse Water Temperature**

**Note:** Household water heaters should be set to deliver a minimum of 120°F. (49°C.) water to the washer for the hot wash setting.

**Note:** Water below 65°F, is too cold to dissolve and activate granular laundry detergents.

Turn the selector knob to the water temperature desired.

- HOT/COLD
- WARM/COLD
- COLD/COLD

# Select Cycle and Time

Push in the cycle control knob and turn clockwise to the proper cycle and wash time.

## Washing:

The HEAVY cycle is designed to wash very soiled loads, the NORMAL cycle is for average soiled loads and the LIGHT cycle should be selected for slightly soiled loads.

For **Regular Fabric** loads, turn the control knob to 12 minutes for a Heavy cycle; to 8 minutes for a NORMAL cycle; and to 5 minutes for a LIGHT cycle.

For **Permanent Press** loads, turn the control knob to 10 minutes for a Heavy cycle; to 7 minutes for a NORMAL cycle; and to 5 minutes for a LIGHT cycle.

For **Delicates**, turn the control knob to start. The washer will fill, then alternate between periods of agitation and soak. The entire wash portion of the cycle lasts about 9 minutes, consisting of approximately 6 minutes of soak and 3 minutes of agitation.

## Presoaking:

The **Soak Only** cycle (not on all models) is used to soak heavily soiled or stained items for as long as desired. The washer does **not** advance automatically into a wash cycle.

To use the SOAK cycle, turn the control knob to start. The washer will fill,

agitate for approximately 3 minutes and soak until the control knob is advanced into a wash cycle or spin and drain.

#### Start the Washer

Pull out the cycle control knob to start the washer. It will fill to the selected water level with the selected wash water temperature. After filling, it will agitate for the selected number of minutes.

The washer will pause briefly throughout each cycle. These pauses are normal.

This washer is designed so that it will not agitate or spin when the lid is open. It will, however, fill with the lid open so water is available for pretreating stains or diluting fabric softener.

Should the lid be opened during a cycle, the washer will stop; when the lid is closed the washer will resume it's cycle at the point it was interrupted.

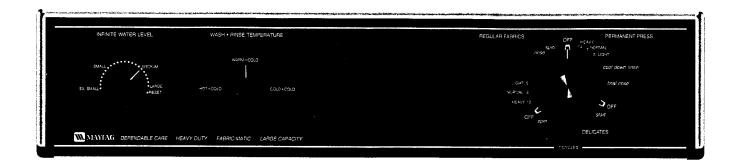
Note: If an unbalanced load occurs during the spin, the washer will atomically stop. If this happens, push in the control knob, wait for the tub to stop spinning, open the lid, redistribute the load, close the lid and pull out the control knob.

## Indicator Lights

# (Lights will vary according to model)

Depending on the model, the washer will have either a SOAK light or an ON light. The ON light stays lit throughout the entire cycle indicating the washer is operating. The SOAK light is on during a soak cycle.

# LAT8104, LAT8034, LAT8024, LAT8014, LAT8004, LAT7334, LAT7314, LAT7304, LAT2914



Features may vary according to model

#### Select Water Level

Turn the selector knob to the setting that matches the size of the load. The pre-set selector knob (not on all models) can be set to five distinct settings: Extra Small, Small, Medium, Large.

The infinite selector knob (not on all models) can be moved to each water level or any point in between.

If more water is needed once the fill is complete, move the knob to Reset, then move it to the desired setting.

Remember, for best washing results, clothes must circulate freely. If too little water is used, it may result in poor washing action, linting or wear on fabrics. Use the following as a guide to select the proper water level:

- Large Use this setting when the tub is 3/4 to full of clothes.
- Medium Use this setting when the tub is 1/2 to 3/4 full of clothes.

- Small (Not on all models) Use this setting when the tub is 1/4 to 1/2 full of clothes.
- Extra Small Less than 1/4 full of clothes.

**NOTE:** When laundering permanent press or delicately constructed items, washable woolens or loosely knit items, never use less than the "Medium" setting. This will minimize shrinkage, wrinkling and pulling of seams.

#### Select Wash/Rinse Water Temperature

Note: Household water heaters should be set to deliver a minimum of 120°F. (49°C.) water to the washer for the hot wash setting.

Note: Water below 65°F. is too cold to dissolve and activate granular laundry detergents.

Turn the selector knob to the water temperature desired.

- HOT/COLD
- WARM/COLD

#### COLD/COLD

## Select Cycle and Time

Push in the cycle control knob and turn clockwise to the proper cycle and wash time.

## Washing:

The HEAVY cycle is designed to wash very soiled loads, the NORMAL cycle is for average soiled loads and the LIGHT cycle should be selected for slightly soiled loads.

For **Regular Fabric** loads, turn the control knob to 12 minutes for a Heavy cycle; to 8 minutes for a NORMAL cycle; and to 5 minutes for a LIGHT cycle.

For **Permanent Press** loads, turn the control knob to 10 minutes for a Heavy cycle; to 7 minutes for a NORMAL cycle; and to 5 minutes for a LIGHT cycle.

For **Delicates**, turn the control knob to start. The washer will fill, then alternate between periods of agitation and soak. The entire wash portion of the cycle lasts about 9 minutes, consisting of approximately 6 minutes of soak and 3 minutes of agitation.

#### Presoaking:

The **Soak Only** cycle (not on all models) is used to soak heavily soiled or stained items for as long as desired. The washer does **not** advance automatically into a wash cycle.

To use the SOAK cycle, turn the control knob to start. The washer will fill,

agitate for approximately 3 minutes and soak until the control knob is advanced into a wash cycle or spin and drain.

#### Start the Washer

Pull out the cycle control knob to start the washer. It will fill to the selected water level with the selected wash water temperature. After filling, it will agitate for the selected number of minutes.

The washer will pause briefly throughout each cycle. These pauses are normal.

This washer is designed so that it will not agitate or spin when the lid is open. It will, however, fill with the lid open so water is available for pretreating stains or diluting fabric softener.

Should the lid be opened during a cycle, the washer will stop; when the lid is closed the washer will resume it's cycle at the point it was interrupted.

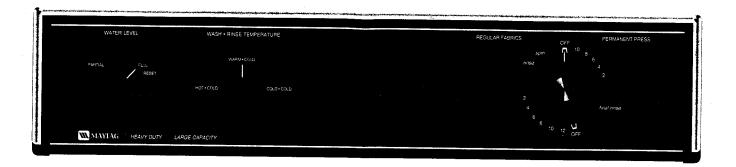
Note: If an unbalanced load occurs during the spin, the washer will atomically stop. If this happens, push in the control knob, wait for the tub to stop spinning, open the lid, redistribute the load, close the lid and pull out the control knob.

# **Indicator Lights**

## (Lights will vary according to model)

The ON light stays lit throughout the entire cycle indicating the washer is operating.

## LAT5005 • LAT5004



Features may vary according to model

#### Select Water Level

The pre-set selector knob can be set to two distinct settings: Partial and Full.

Turn the selector knob to the setting that matches the size of the load.

If more water is needed once the fill is complete, move the knob to Reset, then move it to the desired setting.

Remember, for best washing results. clothes must circulate freely. If too little water is used, it may result in poor washing action, linting or wear on fabrics. Use the following as a guide to select the proper water level:

- Full Use this setting when the tub is 3/4 to full of clothes.
- · Partial Use this setting when the tub is up to 3/4 full of clothes.

# Select Wash/Rinse Water Temperature

Note: Household water heaters should be set to deliver a minimum of 120°F. (49°C.) water to the washer for the hot wash setting.

Note: Water below 65°F, is too cold to dissolve and activate granular laundry detergents.

Turn the selector knob to the water temperature desired.

- HOT/COLD
- WARM/COLD
- COLD/COLD

#### Select Cycle and Time

Push in the cycle control knob and turn clockwise to the proper cycle and wash time.

#### Washing:

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For Regular Fabric loads, turn the control knob up to 12 minutes for a Heavy cycle; to 6-10 minutes for a NORMAL cycle; and to less than 6 minutes for a LIGHT cycle.

For **Permanent Press** loads, turn the control knob up to 10 minutes for a Heavy cycle; to 6-8 minutes for a NORMAL cycle; and to less than 6 minutes for a LIGHT cycle.

To **Soak** heavily soiled or stained items on the Regular or Permanent Press cycle, push the control knob in after the washer has agitated a few minutes. This will stop the washer and let the load soak. To start washing again, pull out the control knob, the washer will resume at the point of interruption.

#### Start the Washer

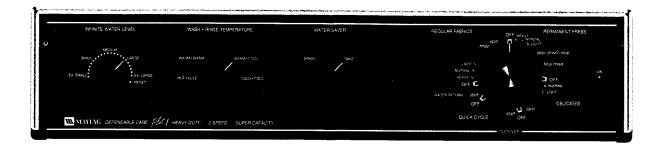
Pull out the cycle control knob to start the washer. It will fill to the selected water level with the selected wash water temperature. After filling, it will agitate for the selected number of minutes.

The washer will pause briefly throughout each cycle. These pauses are normal.

This washer is designed so that it will not agitate or spin when the lid is open. It will, however, fill with the lid open so water is available for pretreating stains or diluting fabric softener.

Should the lid be opened during a cycle, the washer will stop; when the lid is closed the washer will resume it's cycle at the point it was interrupted.

Note: If an unbalanced load occurs during the spin, the washer will atomically stop. If this happens, push in the control knob, wait for the tub to stop spinning, open the lid, redistribute the load, close the lid and pull out the control knob.



Features may vary according to model

## Select Water-Saver Option

Turning the selector knob to save allows water from REGULAR FABRIC cycles, DELICATE cycles and the QUICK CYCLE to be pumped into a storage tub and saved for the next load.

Note: Water cannot be saved when PERMANENT PRESS cycles are used. It is best not to reuse wash water for washing permanent press items. These items may pick up soil and lint suspended from previous washings, which may be difficult to remove.

When the selector knob is turned to **Drain**, the wash water is not saved for reuse. The water drains normally.

#### **Returned Saved Wash Water**

To reuse the water for the next load:

(Do not add until the water from the storage tub has been returned to the washer tub.)

- Push in the cycle control knob and turn clockwise to the WATER RETURN "start" position.
- Pull out the control knob to start pumping the water from the storage tub back into the washer. The washer will start agitating when the control knob is pulled out and will continue to agitate until it is pushed in.
- After the water has been returned to the washer tub, push in the control knob. (A small amount of water and sediment will remain in the storage tub.)
- 4. Add approximately 1/2 the normal amount of detergent and, if desired, the normal amount of bleach.
- 5. Add Wash Load.
- 6. Reset the control knob to a Regular Fabrics or Delicates cycle or "start" on the Quick Cycle. If extra water is needed for the water level selected, the washer will add it automatically. If the temperature selection is on "HOT", the water added will help maintain the temperature of the saved water.

#### Select Water Level

Turn the infinite selector knob to the setting that matches the size of the load. It can be set to EX. SMALL, SMALL, MEDIUM, LARGE or EX. LARGE, or any point in between.

If more water is needed once the fill is complete, move the knob to Reset, then to the desired setting.

For best washing results, clothes must circulate freely. If too little water is used, poor cleaning, linting and excessive wear may result. Use the following guide to select the proper water level:

- Ex. Small 1/4 full of clothes.
- Small 1/4 to 1/3 full of clothes.
- Medium 1/3 to 1/2 full of clothes.
- Large 1/2 to 3/4 full of clothes.
- Ex. Large 3/4 full of clothes.

Note: When laundering permanent press items or items of delicate construction, washable woolens or loosely knit items, never use less than the MEDIUM setting. This will minimize shrinkage, wrinkling and pulling of seams.

#### Select Wash/Rinse Water Temperature

Turn the selector knob to point at the water temperature desired.

- HOT/COLD Wash water will be the temperature of the water coming from the hot water faucet. Rinse water will be cold. Use this setting for heavily soiled whites and colorfast items.
- WARM/WARM Wash water will be a mixture of water coming from the hot and cold water faucets. Rinse water will be the same, except when the

permanent press cycle is selected; then it will automatically be cold. Use this setting for delicates and for colored items when a warm rinse following the wash is preferred.

- WARM/COLD Wash water will be a mixture of water coming from the hot and cold water faucets. Rinse water will be cold. Use this for items with moderate soil level and colored items.
- COLD/COLD Wash and rinse water will be the temperature of the water coming from the cold water faucet.
   Use this setting to minimize fading of brightly colored items and shrinkage of washable woolens.

**NOTE:** Water below 65°F is too cold to dissolve and activate granular laundry detergents.

## **Select Cycle and Time**

Push in the cycle control knob and turn clockwise to the proper cycle and wash time.

The HEAVY cycle is designed to wash very soiled loads, the NORMAL cycle is for average soiled loads and the LIGHT cycle should be selected for slightly soiled loads.

For **Regular Fabric** loads, turn the control knob to 12 minutes for a heavy cycle; to 8 minutes for a normal cycle; and to 5 minutes for a light cycle.

For Permanent Press loads, turn the control knob to 10 minutes for a heavy cycle; to 8 minutes for a normal cycle; and to 5 minutes for a light cycle. Due to the extra cool down rinse which minimizes wrinkling, this cycle can also be used for non-permanent press items when additional rinsing is needed.

For **Delicates**, washable woolens, or loosely woven items, turn the control knob to 8 minutes for Normal cycle and to 5 minutes for a Light cycle.

The **Quick Cycle** reduces the cycle time by using a 6 minute wash and a shorter first spin and rinse. Total cycle time is approximately 16 minutes plus fill times. To select, turn the control knob to start. (Recommended for lightly soiled items).

NOTE: The washer is automatically programmed to assure proper agitation and spinning for each load type.
REGULAR FABRIC cycles and the QUICK CYCLE will provide a fast wash/spin speed. PERMANENT PRESS will have a fast wash/spin speed along with a cool-down rinse. DELICATE cycles will have a gently wash and slow final spin speed.

#### Start the Washer

Pull out the cycle control knob to start the washer. It will fill to the selected water level with the selected wash water temperature. After filling, it will agitate for the selected number of minutes. The washer will pause briefly throughout each cycle. These pauses are normal.

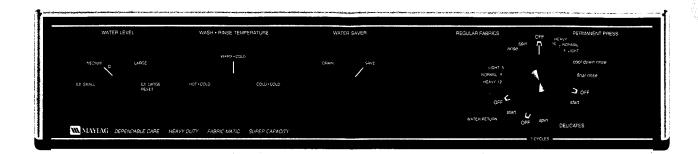
This washer is designed so that it will not agitate or spin when the lid is open. It will, however, fill with the lid open so water is available for pretreating stains or diluting fabric softener. However, when returning saved water the lid must be closed. Should the lid be opened during a cycle, the washer will stop; when the lid is closed and the control knob is pulled out, the washer will resume its cycle at the point it was interrupted.

NOTE: If an unbalanced load occurs during the spin, the washer will automatically stop. If this happens, push in the control knob, wait for the tub to stop spinning, open the lid, redistribute the load, close the lid and pull out the control knob.

# Indicator Light

The ON light stays lit throughout the entire cycle indicating the washer is operating.

#### LAW9304



Features may vary according to model

## Select Water-Saver Option

Turning the selector knob to save allows water from REGULAR FABRIC cycles, DELICATE cycles to be pumped into a storage tub and saved for the next load.

Note: Water cannot be saved when PERMANENT PRESS cycles are used. It is best not to reuse wash water for washing permanent press items. These items may pick up soil and lint suspended from previous washings, which may be difficult to remove.

When the selector knob is turned to **Drain**, the wash water is not saved for reuse. The water drains normally.

## **Returned Saved Wash Water**

To reuse the water for the next load:

(Do not add until the water from the storage tub has been returned to the washer tub.)

- Push in the cycle control knob and turn clockwise to the WATER RETURN "start" position.
- Pull out the control knob to start pumping the water from the storage tub back into the washer. The washer will start agitating when the control knob is pulled out and will continue to agitate until it is pushed in.
- After the water has been returned to the washer tub, push in the control knob. (A small amount of water and sediment will remain in the storage tub.)
- 4. Add approximately 1/2 the normal amount of detergent and, if desired, the normal amount of bleach.
- 5. Add Wash Load.
- 6. Reset the control knob to a Regular Fabrics or Delicates cycle or "start" on the Quick Cycle. If extra water is needed for the water level selected, the washer will add it automatically. If the temperature selection is on "HOT", the water added will help maintain the temperature of the saved water.

#### Select Water Level

Turn the infinite selector knob to the setting that matches the size of the load. It can be set to EX. SMALL, MEDIUM, LARGE or EX. LARGE, or any point in between.

If more water is needed once the fill is complete, move the knob to Reset, then to the desired setting.

For best washing results, clothes must circulate freely. If too little water is used, poor cleaning, linting and excessive wear may result. Use the following guide to select the proper water level:

- Ex. Small 1/4 full of clothes.
- Medium 1/3 to 1/2 full of clothes.
- Large 1/2 to 3/4 full of clothes.
- Ex. Large 3/4 to full of clothes.

Note: When laundering permanent press items or items of delicate construction, washable woolens or loosely knit items, never use less than the MEDIUM setting. This will minimize shrinkage, wrinkling and pulling of seams.

Select Wash/Rinse Water Temperature

Turn the selector knob to point at the water temperature desired.

- HOT/COLD Wash water will be the temperature of the water coming from the hot water faucet. Rinse water will be cold. Use this setting for heavily soiled whites and colorfast items.
- WARM/COLD Wash water will be a mixture of water coming from the hot and cold water faucets. Rinse water will be cold. Use this for items with moderate soil level and colored items.

 COLD/COLD - Wash and rinse water will be the temperature of the water coming from the cold water faucet.
 Use this setting to minimize fading of brightly colored items and shrinkage of washable woolens.

**NOTE:** Water below 65°F is too cold to dissolve and activate granular laundry detergents.

## **Select Cycle and Time**

Push in the cycle control knob and turn clockwise to the proper cycle and wash time.

The HEAVY cycle is designed to wash very soiled loads, the NORMAL cycle is for average soiled loads and the LIGHT cycle should be selected for slightly soiled loads.

For **Regular Fabric** loads, turn the control knob to 12 minutes for a heavy cycle; to 8 minutes for a normal cycle; and to 5 minutes for a light cycle.

For **Permanent Press** loads, turn the control knob to 10 minutes for a heavy cycle; to 8 minutes for a normal cycle; and to 5 minutes for a light cycle. Due to the extra cool down rinse which minimizes wrinkling, this cycle can also be used for non-permanent press items when additional rinsing is needed.

For **Delicates**, washable woolens, or loosely woven items, turn the control knob to start. The washer will fill, then alternate between periods of agitation and soak. The entire wash portion of the cycle lasts about 9 minutes, consisting of approximately 6 minutes of soak and 3 minutes of agitation.

#### Start the Washer

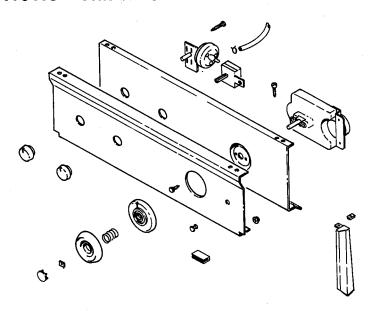
Pull out the cycle control knob to start the washer. It will fill to the selected water level with the selected wash water temperature. After filling, it will agitate for the selected number of minutes.

The washer will pause briefly throughout each cycle. These pauses are normal.

This washer is designed so that it will not agitate or spin when the lid is open. It will, however, fill with the lid open so water is available for pretreating stains or diluting fabric softener. However, when returning saved water the lid must be closed. Should the lid be opened during a cycle, the washer will stop; when the lid is closed and the control knob is pulled out, the washer will resume its cycle at the point it was interrupted.

NOTE: If an unbalanced load occurs during the spin, the washer will automatically stop. If this happens, push in the control knob, wait for the tub to stop spinning, open the lid, redistribute the load, close the lid and pull out the control knob.

# **CYCLE FUNCTIONS - TIMER OPERATED MODELS**



#### FILL CYCLE:

The fill cycle is initiated as the user rotates the Timer dial to the "fill" position for any of the three cycles available (Permanent Press, Delicates and Regular Fabrics) and pulls out the Timer knob. Pulling out the Timer knob allows the L1 side of the power supply (refer to schematic) to go through the Line Switch and on to the time.

Timer Cams are closed during fill which allows L1 to go through the Timer and on to the Temp Switch. Depending upon what water temperature is selected, L1 is routed through the Temp Switch and on to one or both of the Water Valve solenoids. This is a 120 VAC water valve.

The Neutral side of the power supply (refer to schematic) is routed through the Pressure Switch and 1 amp fuse and on to the Water Valve. With L1 and Neutral at the Water Valve, one or both solenoids will be energized (depending upon temperature selected). The tub

begins to fill with water, regardless of lid position.

# **AGITATION CYCLE (Start and Run):**

The lid must be closed in order for the machine to agitate. During fill, the water in the tub will rise until a selected level is reached (small, medium, or large) which causes the contacts inside the pressure switch to move from the "fill" to the "run" position. When this happens, the water valve is deenergized and neutral is routed to the motor run windings through timer cams to the motor start windings. L1 is routed to the run windings through the line switch, the normally open contacts on the lid switch and through the normally closed contacts in the check switch. L1 is routed to the start windings through the line switch, the normally closed contacts on the check switch and through the timer. At about 75% of full speed, the drive motor's centrifugal switch "opens" and drops the start winding out of the circuit. The drive motor is running and agitation begins.

# SPIN CYCLE (Start and Run):

Spin is accomplished by reversing the rotation of the Drive Motor.

The lid has to be closed in order for the machine to spin. Closing the lid closes the normally open contacts in the lid switch and allows the normally closed contacts in the check switch to be closed. L1 is routed to the run windings through the line switch, the normally open contact on the lid switch and through the normally closed contacts in the check switch. L1 is routed to the start windings through the line switch, the normally open contacts on the lid switch, the normally closed contacts on the check switch, and the timer. As with agitation, the centrifugal switch

"opens", drops out the start winding, and the spin cycle begins.

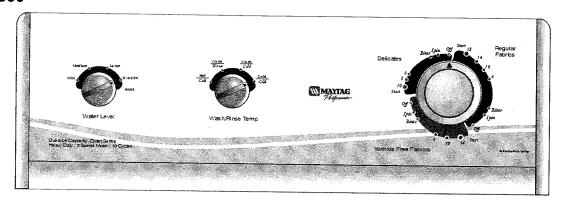
The lid switch mechanism is the mechanism which stops the cycle if the tub becomes unbalanced. During an unbalance, a raised "fence" on the tub cover engages a trip lever on the lid switch mechanism. This trip lever in turn engages the switch lever in the lid switch mechanism thus forcing the switch lever to move and release the plunger on the lid switch. When the plunger on the lid switch is released, the contacts open and the current flow to the motor is broken. Opening and closing the lid resets the lid switch mechanism and starts the machine back into spin.

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# **CONTROL FACIA**

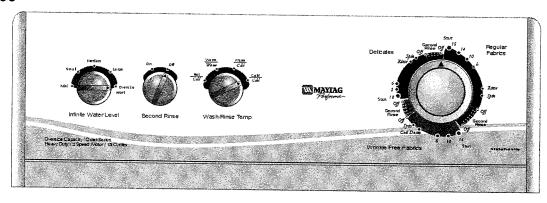
All models have the standard features: Oversize Capacity Plus Tub, Rotary Controls, 2-Speed Motor, 4 Water Temperatures, Warm Rinse Option, 4 Water Levels, Bleach Dispenser, and Automatic Fabric Softener Dispenser.

# **LAT2300**



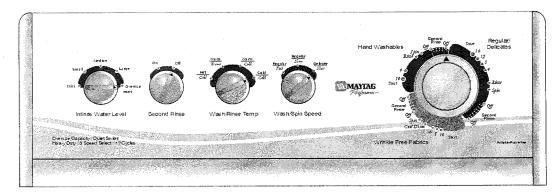
Standard Features plus Big Clean Dual Action Agitator and Infinite Water Levels.

## **LAT2500**



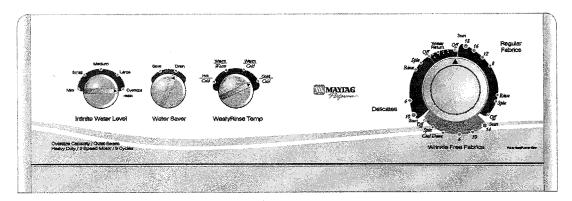
Standard Features plus Big Clean Dual Action Agitator, Second Rinse Option, Infinite Water Levels.

#### LAT3500



Standard Features plus Outboarded 3 Speed Combinations, Automatic Presoak, Gentle Wash Option, Normal Spin Option, Gentle Spin Option, Second Rinse Option, Big Clean Dual Action Agitator.

## LAW2400 Water Saver Model



The Water Saver model features: Rotary Controls, 2-Speed Motor, 4 Water Temperatures, Warm Rinse Option, Infinite Water Levels, Bleach Dispenser, and Fabric Softener Dispenser.

# **SECTION 3. WASHER - SERVICE PROCEDURES**

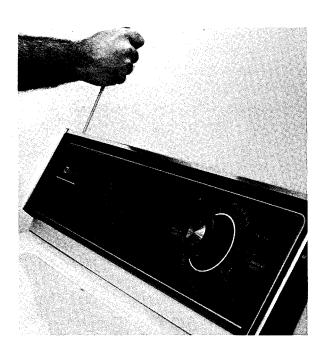
## ALWAYS DISCONNECT UNIT FROM POWER SOURCE BEFORE SERVICING

# **CONTROLS**

#### To Remove Control Panel

Disconnect washer from power supply.

Remove the two inside screws from top of panel and tilt away from console.



With the control panel cover open, you gain access to most of the electrical components.

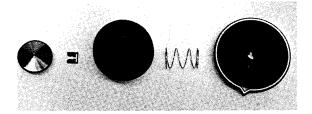
Depending on the model, you will have access to the following: timer, water temperature switch, water level switch, speed switch, lid switch, microprocessor board, motor relays and transformer.

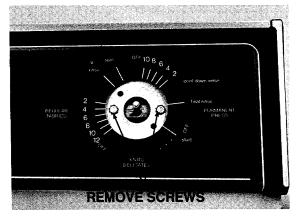
#### **Timer**

A timer is a series of switches driven by an electric motor. These switches control the fill, agitation and spin of a washer. These functions can be done at the same time, such as filling and spinning, as in the spray rinse.

#### Timer removal:

- Disconnect washer from power supply.
- 2. Pry the cap off and pull the retainer clip off the timer shaft. Remove the timer knob, spring and dial.





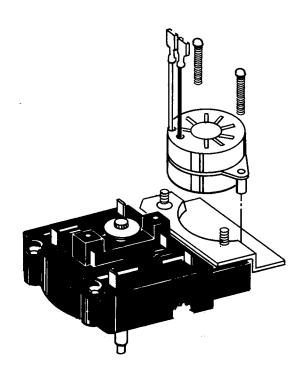
**Note:** The timer shaft pin is longer on one side. This is to prevent the dial from being installed incorrectly.

- 3. Remove the two screws holding the timer in position. *Note which set of holes the mounting screws are located in.*
- Remove the two inside screws on the control panel and tilt away from the console.
- 5. Remove wires from timer.

**NOTE:** Always replace by wire number.

If the timer will not advance, it usually requires replacing the timer motor.

Check parts manual for part number.



## Timer motor removal:

- 1. Follow procedure to remove timer.
- 2. Disconnect unit from power source before servicing.
- 3. Remove the two screws holding timer motor to timer.

4. Remove timer motor wires from timer.

# **Microprocessor Board**

Some models use a microprocessor board to control the fill, agitate and spin cycles instead of a mechanical timer. The components involved with these cycles are the microprocessor board, transformer, water level switch, motor relays and lid switch.

The control is divided into three main areas: (1) the washer program selection area, (2) the display and level adjustment area, and (3) the washer option selection area. Any legitimate key selection is followed by a sound from the audio device, the corresponding display change, and the appropriate machine response. Any key selection which is not legitimate prompts no response. The machine is started by selecting a program.

The microprocessor board controls the operation of the washer. It is an electronic circuit board that is located in the console and is attached to the back of the touch pad. It receives the data as the user selects the type of cycle and options by pressing the indicated areas on the touch pad. The touch pad does not function as a switch but as a menu to make selections. Behind the touch pad are switch actuators (push rods) that actuate switches on the microprocessor board when the user makes the selections.



# **Microprocessor Board Fault Codes**

- F1 in display indicates Board Failure (lid circuit). Inoperable. Replace microprocessor board.
- F2 in display indicates Water valve thermistor sense failure (too low). Operative.
- F2 in display indicates Water valve thermistor sense failure (too high). Operative.
- F4 in display indicates Board Failure (level circuit). Inoperable. Replace microprocessor board.
- F9 in display indicates low voltage.
   Operative.

Fault codes F1 & F4 will be displayed when the failures occur, while F2, F3, and F9, if present, can only be viewed after a key sequence of OFF and while holding OFF actuate SLOW SPIN for 2 seconds. After the entire display turns on then off, the code will be displayed. To re-test the water valve failure, water must be run in the machine. If F2 or F3 occur, the machine will default to both

water valves on during the Warm temp, 50% more hot water for Energy Hot and 50% more cold water if Energy Warm.

To implement the lid switch test for welding, the lid must be opened between programs. If this does not occur, "lid" will appear in the display when the next program is selected. This must be cleared by lifting the lid before a program can be selected. If opening the lid does not clear the "lid" from the display the assumption is that the lid switch is welded. The test does not occur if the cycle is ended by the pressing of the OFF-KEY, only if the cycle ends naturally.

#### **DISPLAY DIAGNOSTIC:**

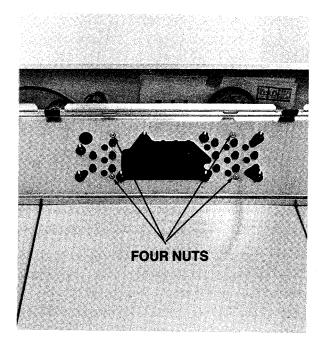
The display can be viewed with all segments on for 4 seconds after a key sequence of OFF and while holding OFF actuate Pause for 2 seconds to activate.

# To Remove Microprocessor Board:

- Disconnect washer from power supply.
- 2. Remove the two inside screws on the control panel.
- 3. Tilt control panel out and remove the three edgeboard connectors from the microprocessor board.
- 4. Remove the eight nuts that secure the microprocessor board to the touch pad.

#### To remove touch pad:

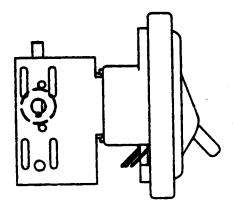
- 1. Follow procedure to remove microprocessor board.
- 2. Remove the four nuts that secure the touch pad to the control panel.



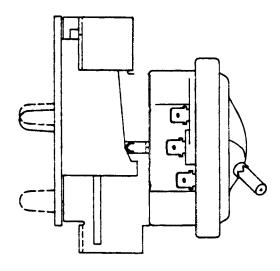
## COMPONENTS

# Water Level Control - Timer Controlled

There are two types of controls used on the water level switch: Rotary control and infinite level control.



**Rotary Dial Control** 



**Infinite Level Control** 

#### ROTARY DIAL CONTROL

The amount of water in the tub is selected by adjusting the dial that corresponds to that level.

The large capacity model has a fourlevel pressure switch: EX-Small, Small, Medium and Large.

The super large capacity model has a five-level pressure switch: Ex-Small, Small, Medium, Large and Extra Large.

The service procedures are the same for both.

The water level is controlled by varying the pressure exerted on the switch diaphragm when the desired level is selected. For example, assume that the extra-large water level is selected for the "Fill" portion of the cycle. The control arm "A" will lock in position on bar (B), thus depressing the tension bar. As the tension bar is depressed, the spring (C) between the bar and switch is depressed, exerting pressure against the diaphragm in the switch, which will hold the electrical contact in the "Fill" position.

As water enters the washer and the level begins to rise, it flows into the air dome. This creates pressure on the diaphragm through the air tube. When the water reaches a predetermined level, the pressure is sufficient to overcome the pressure exerted on the diaphragm by the pressure switch. As the diaphragm rises, the electrical contact arm is moved from "Fill" to the "Run" position.

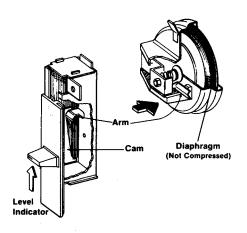
As water is drained from the washer during spin, water is also drained from the air dome, lowering air pressure in the air tube. This allows the switch contact to reset to the "Fill" position.

If the setting of MEDIUM or SMALL is used, there is less pressure applied to the tension bar, resulting in a decreased amount of air pressure required to trip the contact arm to the "Run" position.

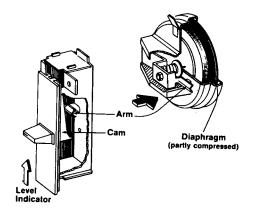
## INFINITE LEVEL CONTROL

The amount of water in the tub is selected by moving the level indicator to the desired level on the legend. The large capacity model may be set on Small, Medium, Large or any place between. The extra large capacity model may be set on Ex-Small, Small, Medium, Large, Extra-Large, or any place between.

When the level indicator is in the down position, there is no pressure on the diaphragm inside the pressure switch.



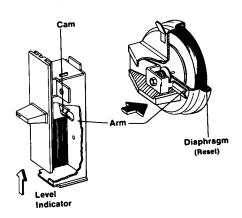
As the level indicator is raised, a tapered cam on the back side of the indicator comes in contact with an arm which pushes against the diaphragm. When the level indicator is pushed all the way up (to a point where resistance is met) the maximum pressure is applied to the diaphragm and it will take a full tub of water to overcome the pressure applied to the pressure switch, moving it from "Fill" to the "Run" position.



### RESET

This allows the user to change to a larger setting once the washer has stopped filling and started to agitate. The user pushes the level indicator all the way up until a resistance is met and

then they continue to push the lever until it stops. This moves the contacts in the pressure switch from "Run" to "Fill" and the control can be reset to increase the desired water level.



### Water Level Switch

If the switch is functioning erratically, remove the air tube from the switch end and blow out the air tube. The washer should be emptied of any water. This will ensure that the air tube is clear for proper switch operation. If this procedure is not followed, any water trapped in either the air dome or upper air tube can cause the switch to falsely actuate and start the washer agitating before the proper water level is reached. If water is found in either of these areas, check the hose for an air leak.

Water normally in the air dome will be drained when the washer is emptied. However, if any water is drawn into the air tube above the air dome, this water cannot be removed from the air tube by merely siphoning the washer.

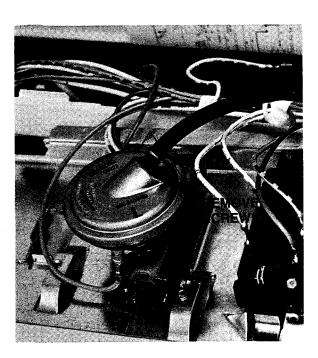
Therefore, when a new switch is installed, blow out the air tube from the switch end.

All hose connections should be checked to make sure that they are airtight since air or water leaks will cause improper operation of the switch.

No attempts should be made to adjust the water level control. The switch has been factory calibrated for a proper balance of conditions which MUST be maintained to assure proper operation of the water level control. Field adjustment is NEVER recommended.

### To Remove Water Level Switch:

- 1. Disconnect washer from power supply.
- 2. Remove control panel and tilt away from console.
- Loosen clamp on air tube and remove tube.
- 4. Remove the two screws securing the switch to the back up plate.
- 5. Remove the wires from the switch.



### **ELECTRICAL TESTING**

# Disconnect unit from power source before servicing.

With the switch removed, it may be tested using an appliance test meter by placing leads on terminals indicated in the following chart. The switch should be tested for "Fill" and "Run".

\*Set control to "Full" position for testing by gently blowing into orifice of control until "click" is heard. Quickly place finger over end of orifice and make electrical check.

SETTINGS	CHECK TERMINALS
Empty (Fill)	20-15 closed circuit 20-16 open circuit
Full* (Run)	20-15 open circuit 20-16 closed circuit

If meter does not indicate a closed or open circuit as shown in the chart, replace switch.

# Water Level Switch - Microprocessor Models

The pressure switch on this washer is different from the pressure switch used on the timer controlled washer. There are three switches inside the switch that are actuated by the pressure created in the air dome and tube as the water level in the tub increases. The microprocessor board monitors the electrical circuits created by these switches to control the water level in the tub.

The following is a brief overview of estimating a total program time including fill times and how certain fill levels are reached.

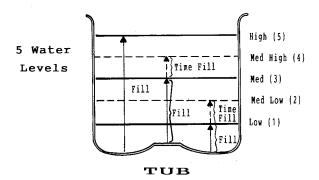
The total time remaining displayed during a given program is estimated based on the current water level selection and the average time of filling for the previous two fills. If a fill level is reached quicker than expected, the displayed time will skip forward. If the fill level is not reached in the estimated time, the display will discontinue to decrement until it has been reached. If a slow fill situation caused the estimated time remaining to be 99 minutes or more, the display will time down and be recalculated at the next cycle milestone.

The washer will include five water levels available, the first, third, and fifth of which will be directly controlled via the pressure switch. The second level will be reached by time filling based on the fill rate seen between empty and the first (lowest) level after the fist level has been reached. The fourth level will be reached by time filling based on the fill rate seen between empty and the first (lowest) level after the third level has been reached. The lowest water level will always have a slow agitation to prevent damage to the clothes.

Five WASH temperatures are provided. The first (cold), and fifth (hot) are obtained by turning the cold and hot valves on only. The second (energy warm), third (warm) and fourth (energy-hot) are obtained by the sensing of the inlet water temperatures, and adjusting the proportion of time the respective valves are turned on to obtain the desired temperature in the wash tub.

# **To Check Water Level Control:**

- Unplug washer power cord from power supply.
- 2. Check for continuity as follows:
  - Empty should show continuity 1-3 and 4-5.
  - Small should show continuity 4-5 only.
  - Medium should show continuity
     1-2 and 4-5.
  - Large should show continuity 1-2, 1-3 and 4-5.
  - Overflow will show no continuity 4-5.



Power from L1 is supplied to the three switches in the water level switch and to the water valve (see schematic). The microprocessor board acts like a switch by controlling the neutral side of the power supply going to the hot and cold solenoids on the water valve (neutral goes to the microprocessor board via pin 3 on edgeboard connector BB and back to the water valve via pin 5 and pin 1). To achieve the proper water level in the tub, the microprocessor

board responds to the electrical circuits in the water level switch to determine how long the solenoids(s) should be energized.

There are five available water temperatures, cold, energy saver warm, warm, energy saver hot and hot. Cold is achieved by energizing the cold solenoid on the water valve. Warm is achieved by energizing both the cold and hot solenoids on the water valve. Hot is achieved by energizing the hot solenoid on the water valve. Energy saver warm is achieved by starting with warm, both cold and hot solenoids energized, and the hot solenoid is then cycled on and off every 30 seconds. Energy saver hot is achieved by starting with warm, both cold and hot solenoids energized, and the cold solenoid is then cycled on and off every 30 seconds.

#### CAUTION -

This is a 120 VAC water valve and voltage will be present at water valve whenever the washer is connected to the power supply (except when the contact between 31 and 32 is broken on the water level switch).

# Checking the water level switch:

### CAUTION

Always disconnect power supply before making continuity checks or taking resistance readings.

- 1. Disconnect washer from power supply.
- Continuity checks can be made across the three internal switches.
   Refer to legend on the schematic to determine condition of the switches

(shaded areas indicate continuity across contacts). Example: contacts 31 to 32 will be closed at all water levels other than High, where the contacts are open.

### To remove water level switch:

- 1. Disconnect washer from power supply.
- Remove the two inside screws on the control panel and tilt forward.
- 3. The water level switch is attached to the top cover by a screw and a locating tab. Remove screw.
- 4. Remove wires from water level switch.
- 5. Loosen clamp and remove air dome hose.

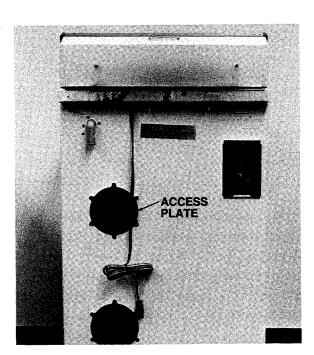


# Air Tube and Dome

A single piece air tube and air dome is used on all models. The air tube end is connected to the spout on the water level switch. The air dome end is connected to a spout on the outer tub.

### To Remove:

- Disconnect washer from power supply.
- 2. Remove the two inside screws from the top of the control panel and tilt away from console.
- 3. Release clamp and remove air tube from water level switch.
- 4. Remove air dome access plate on back of washer.
- 5. Release clamp and remove air dome from the tub spout.
- Pull air tube out of top cover and remove through access. Before removal, note routing of air tube and position of air dome on tub spout.



### **Motor Control**

The speed and direction of the motor are controlled by the microprocessor board through three 24 VDC relays: Fast, Slow and Reversing. The 24 VDC control voltage comes from the microprocessor through edgeboard connector AA (see schematic). There are two different size terminals used on the

relays. The smaller terminals are used for the 24 VDC wires and the larger terminals are used for the 120 VAC wires.

The Fast and Slow relays (single-pole, single-throw) are used to control the speed of the motor. These relays carry the same part number and are interchangeable. The Fast relay is energized to provide regular speed and Slow relay is energized to provide slow speed. NOTE: The speed of the motor is determined by the cycle selected.

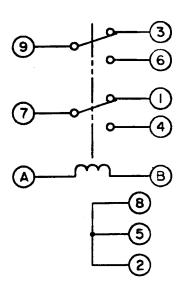
The following table defines the relay on and off states as voltages (at BB3 for AC & AT AA3 for DC), measured with respect to the relay outputs.

Washer Relay	On	Off
Hot BB1	ov	120VAC
Cold BB5	ov	120VAC
Slow Motor (AA4)	20VDC min.	OV
Fast Motor (AA1)	20VDC min.	ov
Reversing Motor (AA5)	20VDC min.	ov

The Reversing relay (double-pole, double-throw) is used to change the direction of the motor for spin. The relay is de-energized during the agitation cycle and is energized during the spin cycle.

# Motor Run Relay - Microprocessor Models

The motor run relay is the relay mounted on the left of the two relays. It is a single pole, single throw type and when energized, completes the L1 side of the power supply from the Lid Switch to the Drive Motor. Both the Lid Switch and the Run Relay must be closed for power to reach the Drive Motor.



ELECTRICAL SCHEMATIC

### **TEST PROCEDURE**

The relay coil is energized by 24 VDC (volts direct current) which is fed from the microprocessor board. Once the relay coil is energized, the relay switch will close, completing the circuit.

Because of the low resistance readings found on the relay coil, a continuity check across the coil terminals with an ohmmeter is recommended. A closed circuit (continuity) should be seen. If an open circuit (no continuity) is seen, the relay should be replaced.

### To Check Run Relay:

Note: To check relay unplug washer power cord from power supply.

- 1. Remove wires from run relay.
- 2. Measure resistance of relay coil across small terminals (YL/BK to GY). Resistance should be approximately 480 ohms.

An infinite reading indicates an open coil and requires relay replacement.

- 3. Re-install coil wires (smaller terminals).
- 4. Connect ohmmeter across larger terminals.

### - CAUTION -

The following is a live voltage check. Use appropriate care.

5. Program the spin cycle by pressing the SPIN pad.

The relay should be energized and the ohmmeter should show zero ohms resistance (continuity). If relay pulls in but ohmmeter does not show continuity, relay contacts have failed and the relay should be replaced.

6. Relay does not pull in, measure DC voltage across coil. If no voltage is present, check microprocessor board or wiring. If 24 VDC is measured, replace relay.

# To Remove Relay:

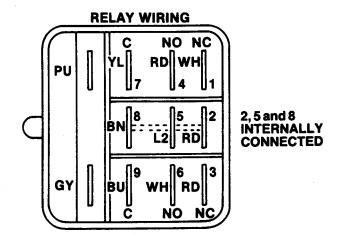
- 1. Remove all wires from relay.
- 2. Remove screws securing relay.

Note: The relay has a tab which fits through a slot in the control housing to assist in mounting and location of the relay.

# Motor Reversing (Spin) Relay -Microprocessor Models

The spin relay is a double pole, double throw type switch. When not energized, this relay is wired to run the motor for agitate.

When energized, the relay contacts reverse the start-winding connections to the motor (blue and yellow wires) and causes it to start and run for spin. If the washer fails to spin, check the reversing relay.



AGITATE	SPIN
1-7	7-4
3-9	9-6

# To Check Reversing Relay:

**Unplug Washer Power Cord from Power** Supply.

- 1. Remove wires from reversing relay.
- 2. Measure resistance of relay coil (GY to PU). Should show approximately 350 ohms.

An infinite reading indicates an open coil and requires relay replacement.

- 3. Re-install coil wires (GY and PU).
- 4. Connect ohmmeter across RD to YL on relay.

## CAUTION —

The following is a live voltage check. Use appropriate care.

5. Program the spin cycle by pressing the SPIN pad.

With the coil energized the ohmmeter should show 0 ohms resistance (continuity). If not, replace relay.

When in spin, voltage from yellow to red should be 0 volts and voltage from blue to red should be 115 volts.

	AGITATE	SPIN
YL-RD	115 VAC	0 VAC
BLU-RD	0 VAC	115 VAC

If these voltages did not change from agitate to spin with machine still in the spin portion of the diagnostic program, check for 24 VDC (direct current) across the purple and gray wires of the coil. If 24 VDC is present, replace the relay. If no 24 VDC is present, check microprocessor board or wiring.

If voltages changed but machine agitates when it was suppose to be spinning and vise versa, check to see that yellow and blue wires are connected to proper terminals on both relay and motor. Reprogram spin cycle.

With the coil energized the ohmmeter should again show 0 ohms resistance (continuity). If not, replace relay.

### CAUTION -

The following is a live voltage check. Use appropriate care.

- Unplug washer power cord from power supply.
- 2. Reverse (interchange) the BU and YL wires on the reversing relay.
- 3. Re-connect power cord to power supply.

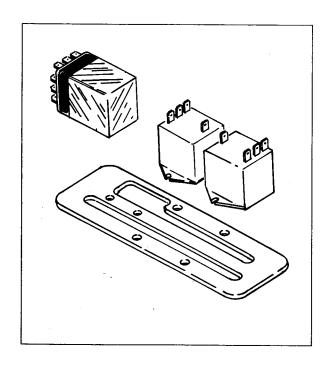
 Program the spin operation. If the washer now spins you know that the motor will reverse and that mechanically the washer dependable drive mechanism is operating.

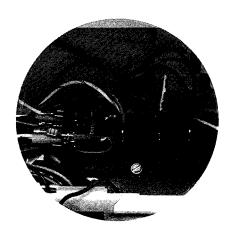
If the washer will only spin, unplug washer power cord from power supply, reverse the BU and YL wires as in previous example and check operation. If agitation is achieved, check for constant voltage at relay coil (relay energized constantly).

If constant voltage, check microprocessor board. If there is no voltage during the agitate period but the washer spins, then change the relay.

# To Remove Relay:

- 1. Remove all wires from relay.
- Remove screw securing relay to control housing. (Note positioning tab for ease in mounting and locating relay.)





MOUNTING PLATE AND RELAYS

# To Remove Relays:

The relays are located in the left hand corner of the washer behind the control panel. The three relays are mounted on a plate that is attached to the washer top.

- 1. Disconnect washer from power supply.
- 2. Remove two inside screws on control panel and tilt forward.
- 3. Remove the two screws securing the mounting plate to washer top.
- 4. Reversing relay is secured to mounting plate with a screw and locating tab. Remove screw and remove reversing relay.
- 5. Fast and Slow relays can now be removed by sliding tabs out of slots.
- 6. Remove wires from relays

# **Transformer**

The transformer is a step-down transformer that is used to transform the incoming line voltage to different values for use by the microprocessor board.

The secondary side of the transformer has three windings that are connected to the microprocessor board through edgeboard connector CC (see schematic).

#### CAUTION —

Always disconnect power supply before making continuity checks or taking resistance readings.

### **Checking The Transformer:**

- 1. Disconnect washer from power supply.
- 2. Primary side. Remove the two wires, R-BK and BR, from the transformer and check for continuity. No continuity, replace transformer.
- 3. Secondary side. Remove the wires from individual winding and make continuity check. Check across Y-BK and Y-BK, no continuity, replace transformer. Check across W-OR and W-OR, no continuity. replace transformer. Check across PK and PK, no continuity, replace transformer.

### CAUTION -

Use extreme care when checking voltage.

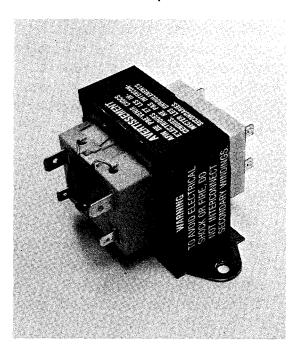
- 4. Primary side. With volt meter connected across terminals, R-BK and BR, check for line voltage (120 volts AC). No voltage, suspect power supply.
- 5. Secondary side (3 windings). With volt meter connected across terminals, Y-BK and Y-BK, 20.7 volts AC should be seen. With volt meter connected across terminals, W-OR and W-OR, 3.8 volts AC should be

seen. With volt meter connected across terminals, PK and PK, 22.6 volts AC should be seen. If not, suspect transformer or power supply.

**Note:** These voltages may vary slightly.

#### To Remove Transformer:

- 1. Disconnect washer from power supply.
- Remove the two inside screws on the control panel and tilt forward.
   The transformer is located in the right hand corner of the console.
- Remove wires from transformer or the edgeboard connector from microprocessor board.
- 4. Remove the two screws securing transformer to top cover.



Voltage readings suspicious; check power supply or replace transformer.

# Varistor (Mov-Metal Oxide Varistor)

The varistor is designed to protect the microprocessor board from excessive voltage. At normal line voltage, the varistor shows extremely high resistance. When the line voltage exceeds the threshold of the varistor, its resistance decreases to a point of providing a voltage bleed-off path. This will prevent line voltage surges or "spikes" from reaching the microprocessor board.

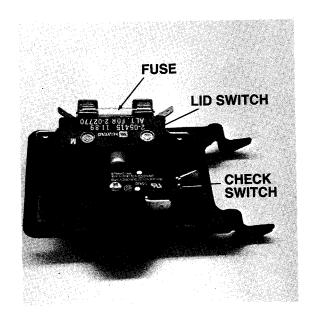
The varistor is actually part of the transformer. It is connected across the primary input terminals to suppress line voltage surges. If visual inspection shows a damaged varistor, the transformer should be replaced.

## LID SWITCH ASSEMBLY

### **Timer Models**

In order for the washer to agitate, spin or fill the lid switch assembly must be operating properly. The assembly consists of a lid switch, check switch and fuse holder mounted on a bracket. The switches are actuated through the plunger mechanism when the lid is opened and closed.

The purpose of the circuity is to open the fuse in the event the lid switch fails. The fuse is in series with the water valve and will prevent the washer from filling with water if it is open. Normal washer operation is resumed only by servicing the lid switch and fuse assembly.



The bracket is secured to the top cover with a screw and locating tabs. The hole for the screw is slotted for adjustment.

### To remove bracket:

- 1. Disconnect washer from power supply.
- 2. Remove control panel.
- 3. Remove wires from switch assembly.
- 4. Remove mounting screw.
- 5. Lift bracket to release tabs from top cover.

# To check lid switch and check switch:

### **CAUTION** -

Always disconnect power supply before making continuity checks or taking resistance readings.

- 1. Remove wires from the switch assembly.
- 2. Check across terminals of each switch for continuity with switch in

open and closed position (see schematic).

3. Replace if necessary.

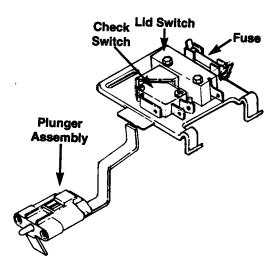
# To check fuse:

- 1. Disconnect washer from power supply.
- 2. Remove wires from fuse holder.
- 3. Check across terminals for continuity.
- 4. No continuity, replace fuse. NOTE: Use a 1 Amp fuse only.

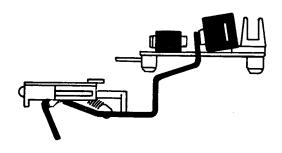
# **Switch Assembly Adjustment:**

- 1. Place a 1 inch block between the lid and the washer top. This needs to be located at the front of the lid.
- 2. Slide the lid switch assembly ahead until a clicking noise is heard from the lid switch.
- 3. At this point, slide the mechanism slowly back until a clicking noise is again heard from the lid switch (hold in that location).
- 4. Lock the mechanism in place with the mounting screw and the lid switch assembly is properly adjusted. NOTE: It is important to be aware that it is the reset operation of the lid switch that is being set by the above technique. Always check this adjustment by turning washer timer to the spin cycle. Washer should shut off when the lid is raised not more than 13/4".

The lid switch assembly consists of a lid switch (single pole, single throw), a check switch (single pole, double throw) and a 1 amp fuse (on timer models). The fuse is in a fuse holder mounted to lid assembly. The end of the lid switch/unbalance lever actuates the lid and check switches.



Lid Closed

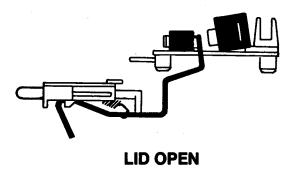


LID CLOSED

The lid switch/unbalance lever will push the actuator button of the lid switch in moving it from the normally open position to the closed position. Electrical power from the line will be passed through the closed switch contacts to the common terminal of the double throw check switch.

With the lid closed the actuator button of the check switch will not be in contact with the lid switch/unbalance lever. The check switch will be in its normal position with the common made to the normally closed contact. Power from line 1 is therefore connected to timer terminal 8B (input to timer).

# **Opening The Lid**



As the lid of the washer is raised, the lid switch/unbalance lever releases the button of the lid switch opening the contacts. Power to the check switch common is interrupted.

As the lid is further raised the lid switch/unbalance lever will contact and actuate the button of the check switch. Even though the check switch contacts will physically be moved, no electrical action will take place because the lid switch will have previously broken the circuit.

When the lid is closed the lid switch and the check switch are in series with the line power input to the timer. When the lid is opened, first the lid switch then the check switch will open to interrupt the line power input to the timer.

### Lid Switch Failure

If the lid switch should fail in the open position (no contact), the washer will simply be non-operative (dead). While rare, a switch can stick (weld) in the closed position. This is unacceptable because a washer cannot be allowed to operate with an open lid particularly in

spin. This lid switch assembly addresses that type of failure.

If the lid switch sticks closed even as the lid switch/unbalance lever releases the button then the check switch will still break the circuit to the timer as the check switch button is activated by the lid switch/unbalance lever. This will stop the washer. As a method of calling attention to a stuck lid switch, a fuse in the washer's fill circuit will be blown. If pressure switch is not satisfied, it works this way:

As the check switch button is actuated. it not only opens the power line circuit to timer, it also transfers that line power to line fuse wired in the neutral side of the fill circuit. If the water level control is in the empty position, a circuit is made from the lid switch through the check switch to the fuse from line one. The neutral side of the line is made to the fuse through the pressure switch to the fuse and the fuse opens. The washer is effectively put "out of service" as it will not fill for the next fill operation.

# Microprocessor Models

The lid switch assembly consist of only a lid switch mounted on a bracket secured to the top cover. It uses the same bracket and plunger as the timer models.

Except for operation during the first fill, the machine will not operate with the lid open. The lid is checked at least once every 25 milliseconds during washer operation. If an open condition is found, the machine goes into a pause mode with "Lid" in the display.

The microprocessor board monitors the lid switch to make sure the switch contacts open when the lid is raised (the check switch and fuse are not used on this model). The lid must be opened between programs to implement this test. If this does not occur a "lid" will appear in the display when the next program is selected. This must be cleared by lifting the lid before a program is selected. If opening the lid does not clear the "lid" from the display, assume the lid switch has failed and replace.

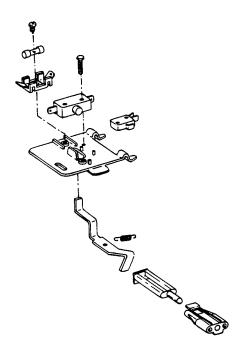
Note: The test does not occur if the cycle is ended by the pressing of the "off" key, only if the cycle ends naturally.

### Remove lid switch:

- 1. Disconnect washer from power supply.
- 2. Remove the two inside screws on control panel and tilt forward.
- 3. Remove wires on lid switch.
- 4. Remove the two screws securing the lid switch to mounting bracket.
- 5. After replacing lid switch, adjust mounting bracket so lid switch will open when lid is raised not more than 1 3/4".
- 6. Place a 1 inch block between the lid and the washer top. This needs to be located at the front of the lid.
- 7. Slide the lid switch assembly ahead until a clicking noise is heard from the lid switch.
- 8. At this point, slide the mechanism slowly back until a clicking noise is again heard from the lid switch (hold in that location).
- 9. Lock the mechanism in place with the mounting screw and the lid

switch assembly is properly adjusted.

Note: It is important to be aware that it is the reset operation of the lid switch that is being set by the above technique. Always check this adjustment by turning washer timer to the spin cycle. Washer should shut off when the lid is raised not more than 1 3/4".



### **Unbalance Condition:**

When a load of clothes becomes unbalanced, the unbalance mechanism will disengage from the lid switch and stop the washer. When this happens the word "UNBALANCED" will appear in the display and an audible signal will sound after a period of 60 seconds. The signal will then sound every 60 seconds until the user lifts the lid (after the tub has stopped), redistributes the clothes in the tub and closes the lid, at which point the cycle resumes.

# LID

### To Remove Lid:

Raise the lid so it is at a 45 degree angle with the top cover.

With the left hand, grasp the left side of the lid toward the back. With the right hand, grasp the right side of the lid at the right front corner.



Taking care to watch where the hinge balls go, pull toward you with the right hand.

### To replace lid:

Place a hinge ball in the recess of the left side of the top cover. Holding it in position, place the lid over the ball so the ball is in the recess on the left side of the lid.



Hold the lid with the left hand keeping sufficient pressure against the left side to ensure the hinge ball will remain wedged between the lid and the top cover. With the right hand, place a hinge ball in the right side of the top cover recess.



Push the lid down against the hinge ball on the right side and with the right

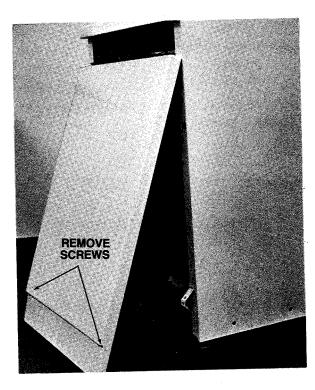
thumb, press down sharply to engage the lid with the hinge ball on the right side.

Note: If the fit between the right hinge ball and the lid is so tight you cannot press it into position with the right thumb, carefully strike the right corner of the lid with the palm of the hand to snap it into position.

# **FRONT PANEL**

### To Remove Front Panel:

- Remove the two screws under the edge at bottom of front panel.
- Swing front panel out from bottom to disengage spring fasteners from top cover.



With the front panel off, you have access to the motor, pump, top cover, hoses and transmission.

# To Replace Front Panel:

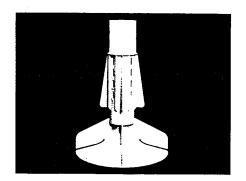
- 1. Engage spring fasteners under the flange on top cover.
- 2. Swing panel down into position and replace screws.

**AGITATOR** 

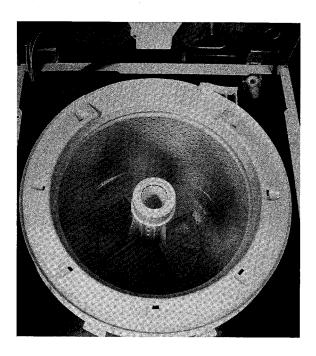
The "Power Fin™" twelve vane agitator creates a unique water action which pushes water through the clothes while moving them from the top of the water to the bottom and then up again. The water action tends to keep the clothes away from the agitator and out toward the tub.

The water circulation pattern keeps the water constantly moving through the lint filter.

Water enters the barrel of the agitator through the slots around the top. It passes through the center and comes out the holes at the bottom of the agitator barrel.

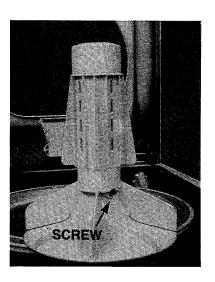


To remove the agitator, remove the set screw holding the agitator in place and pull up. Be sure set screw is replaced and securely tightened when the agitator is replaced.



**Note:** It will help to pull the washer unit slightly forward. This will allow you lift the lid back further to provide greater clearance for the agitator skirt.

The agitator is secured to the agitator drive shaft with a 1/4" hex head screw in the barrel of the agitator into the groove of the agitator shaft.



# Before attempting to pull agitator, loosen the screw.

When replacing agitator, be sure to push down until agitator is bottomed before retightening the screw.

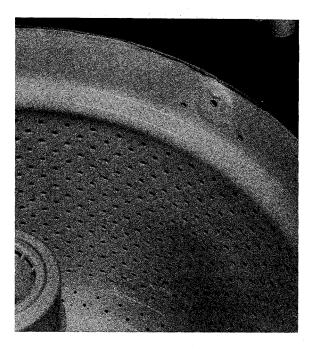
The water action tends to keep the clothes away from the agitator and out toward the tub.

# FABRIC SOFTENER **DISPENSER**

The built-in fabric softener dispenser, located in the top of the agitator is designed to dispense fabric softener into the final rinse automatically. Since bleach and granular detergents should not be used in the final rinse, they should not be placed in the dispenser cup. Always follow the manufacturer's directions for usage of fabric softener.

Place diluted softener in dispenser cup before starting washer. During agitation, it remains in the cup.

At the start of the spin for the final rinse, the softener is spun up to the top of the cup and leaves the cup through the slots around the top circumference of cup.

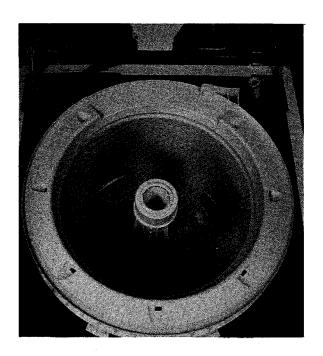


The softener is held in the filter cap by centrifugal force during the remainder of the spin cycle.

At the end of the spin, the softener drains down through the agitator into the wash basket as the water enters for the final rinse.

### CAUTION:

Do not interrupt the spin cycle when fabric softener is being used. This will cause the softener to be dispensed prematurely and it will not be properly utilized. This can result in "grease" spots on the clothes.





# LINT FILTER

# Self Cleaning Filters

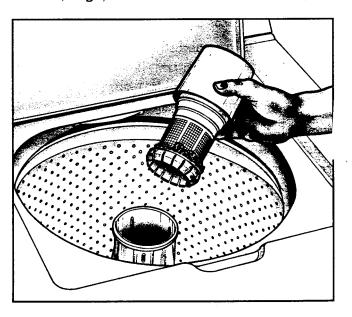
The system uses two self-cleaning filters located in the bottom of the inner tub. The filters are cleaned when the washer goes into spin. The lint is held on the bottom side of the filters and is flushed down the drain with the water.

### To Remove The Self-Cleaning Filters:

- 1. Loosen screw located on the side of the agitator.
- 2. Remove agitator.
- Pry out filter. It is held in place with several tabs. Grasp filter in the center on the long side. Lift up and push in at the same time to remove filter.
- 4. Replace filter by pressing into place.

# **Manual Clean Lint Filter**

Water Saver models are equipped with manual clean lint filters. The manual clean lint filter (on some models) is located in the center of the agitator. The filter may be removed and cleaned. Because of the effectiveness of the draining system, normally there will be little lint or none at all on the filter. More lint will be collected when washing very linty loads, such as towels, rugs, and blankets.

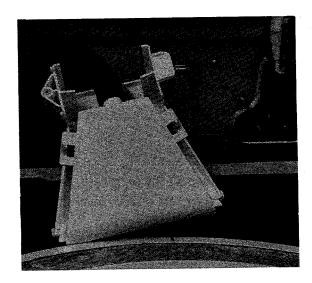


# WATER INJECTOR ASSEMBLY

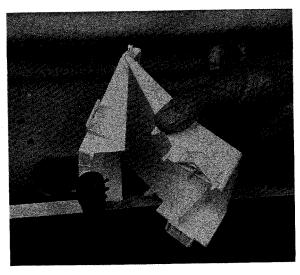
The injector housing is connected to the top cover. A hose is connected to the injector housing from the water valve.

# To Remove Injector Housing:

- 1. Disconnect unit from power supply.
- 2. Pull washer away from wall to access components.
- 3. Remove the two inside screws on the control panel and tilt away from the console.
- 4. Remove two screws, securing front panel.
- 5. Raise top cover to access injector.
- 6. Remove screw securing injector to control housing.
- 7. There is a tab on the injector housing that stabilizes position, remove injector housing by sliding assembly to the left (after screw is removed).
- 8. Remove cover securing injector housing to top cover.



9. Remove clamp from hose attached to the injector housing.



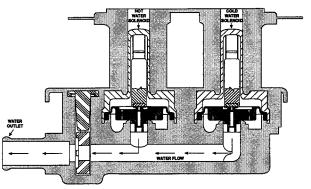
10. Reverse procedures to reassemble.

# **WATER VALVE**

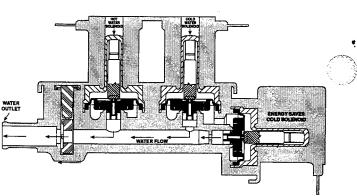
There are three different water valves used on Maytag's current line of automatic washers. The type of valve used depends on the washer model. The three valves types are as follows:

- 1. Standard Two Coil Valve: This valve is used on models which do not offer the Energy Saver feature.
- 2. Three Coil Valve: This valve is used on models with the Energy Saver feature.
- 3. Two Coil Valve with Thermistor: This valve is used on the microprocessor model which is the LAT9904.

The following drawing shows the standard two coil valve used on automatic washer models which do not offer the Energy Saver feature.



1.

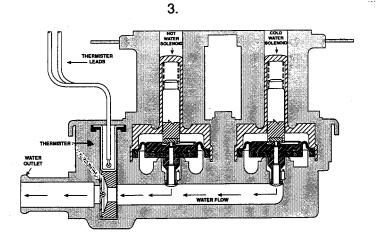


2.

With this valve, if cold is selected, only the cold water solenoid is energized. If hot is selected, only the hot water solenoid is energized. If warm is selected, both solenoids are energized and the temperature is a mixture of whatever the cold and hot water temperatures provide. Also, the pressure of the water is a factor since the cold and hot water is mixed.

The next drawing shows a three solenoid valve. When cold is selected. only the cold water solenoid is energized. When warm or hot is selected with an Energy Saver feature, both the cold and the hot water solenoids are energized. Plus, the Energy Saver solenoid is also energized. This not only allows water from the hot an cold water sources but also provides some water form the Energy Saver solenoid. which is energized, and mixes an additional amount of cold water with the hot and cold already being supplied. The result is a colder warm and a cooler hot.

The next drawing shows a two solenoid water valve with a thermistor. This is caused on the microprocessor model (LAT9904). The thermistor checks the temperature of the water and electrically controls the temperature by means of opening and closing the cold and hot water solenoids to provide the desired water temperature. Assuming 140°F. hot water and 60°F. cold water are available with normal water pressure.



If the washer won't fill properly, make the following checks before replacing the water valve.

 Check faucets to make sure they are turned on.

- · Check screens in inlet hoses at faucets and at inlet of water valve. Be sure they are not plugged.
- Check water level control. Be sure the air dome tube is attached to the the control and the tub. For electrical checks, see Electrical Troubleshooting Section.
- · Check water valve coils for continuity. These checks should be made with the electrical supply disconnected from the washer The Maytag appliance test meter scale is marked open and closed to indicate continuity or an incomplete circuit. If there is an incomplete circuit, there is either a bad coil or a wiring problem. If a coil is bad, the water valve should be replaced.

### **Thermistor Controlled Water Valve**

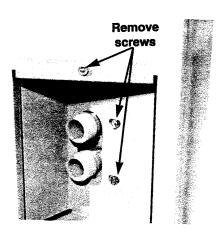
On microprocessor models the washer is equipped with a thermistor controlled water valve. The controller attempts to get the temperatures in the wash tub to follow the following chart as accurately as possible. There are many factors which can contribute to the temperature in the wash tub, so these temperatures may vary, depending on the conditions of the household. The controller first determines the temperature by turning on the cold water valve, both water valves and then the hot water valve. The calibration of each valve will take approximately 15 seconds. Then the controller will determine which ratio of hot, warm and cold to use to fill to the target temperature. If the thermistor fails or is disconnected, the calibration

phase will not have the hot water turned on, and will default to a 15 seconds each of hot-warm for energy hot, both water valves on for warm and 15 seconds each of cold-warm for energy warm.

Water Temper- ature	Description	Target Temper- ature
5	hot	house hot water
4	energy hot	120° Fahrenheit
3	warm	120° Fahrenheit
2	energy cold	80° Fahrenheit
1	cold	house cold water

### Water Valve Removal

- 1. Disconnect unit from power supply. Shut off both hot and cold water faucets.
- 2. Slide the washer away from wall. Place a pan or bucket below the hoses directly under the water valve. Remove both hoses catching excess water in pan.
- 3. Remove the 5/16" screw that holds the bracket to the cabinet.
- 4. Loosen the clamp and remove the outlet hose from the valve. Some water will come out; catch in a pan. NOTE wire colors on the valve terminals and remove the wires.
- 5. Remove the two 5/16" screws holding the valve to the bracket.
- 6. Pivot out until flange clears back and lift up to disengage the bracket from the slot on the back panel.



**Note:** This is a non-repairable valve.

### Water Valve Installation

Mount the new valve to the bracket with the two 5/16" screws. A white wire goes to each electrical solenoid with the orange wire going to the hot water solenoid on the valve. The remaining wire, blue, goes to the cold water solenoid. Re-install the hose and clamp on the outlet of the valve. Secure the bracket with the 5/16" screw. Replace the hot water hose to the side marked with an "H" on the bracket.

The cold water side is marked with a "C". Turn the water faucets on and check for leaks at the valve. Slide the washer back into position and plug in the power cord. Select the "Regular" setting and the "Hot" setting. Let water run for a short time and then check temperature of the water coming into tub. If the water is hot, then select the "Cold". If this water is cold, the hoses are installed correctly. If the temperatures are incorrect, simply shut off the water faucets and reverse the fill hoses.

**Note:** On microprocessor models depressing the "Pause/Resume" pad during fill will override the lid switch

assembly allowing the lid to open providing assess for checking the temperature of incoming water.

# Water Valve Operation

Note: On microprocessor models this is a 24 volt DC valve, do not test using line voltage (120VAC). Timer models use a 120 VAC water valve.

The following is an explanation of the operation of the water valve and points out the importance of the filter screens.

### **Inlet Hose Screens**

Filter screens MUST be used in the inlets of the water valve to minimize unnecessary valve failure. These screens are used in the valve inlet to prevent foreign materials from entering the valve. Particles of sand, soil or mineral deposits gathering in the valve can block the diaphragm "open" or hinder solenoid plunger operation.

Both the inlet hoses have screens to help filter out the foreign material that may have come from the water source. A fine mesh screen is used in the water valve inlet to filter out the material that may pass through the inlet hose screen. Always check both inlet hose and valve screens.

IF FILTER SCREENS HAVE BEEN REMOVED, BE SURE SCREENS ARE REPLACED TO MINIMIZE UNNECES-SARY VALVE FAILURE.

#### No Fill

Check water valve coils for continuity. These checks should be made with the electrical supply disconnected from the washer. The 24 volt water valve coil

should have a resistance of between 140 and 160 ohms. For 120 Volt valves 500 - 900 ohms. For convenience, the analog appliance test meter scale is marked open and closed to indicate continuity or an incomplete circuit. If there is an incomplete circuit, there is a bad coil. If a coil is bad, the water valve should be replaced.

Note: On microprocessor models the water valve solenoid coils are intended for 24 volts DC operation. DO NOT test using a motor test cord.

### Over Fill

Put machine into a fill, preferably a warm setting. While the washer is filling, turn the control to "OFF" or disconnect the power cord. If the water valve does not stop the flow of water. the valve is at fault. If the water flow of water stops, the problem is electrical. Check water level control, microprocessor board and wiring.

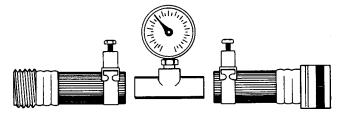
### Slow Fill

- Check screens at faucet for sediment build-up.
- 2. Check screens at water valve for sediment build-up.
- 3. Check water pressure. The water pressure should be between 30 p.s.i. and 120 p.s.i. - dynamic (flow) pressure.

Note: If washer fills (Large setting) in five minutes or less, water valve is operating normally.

A flow-pressure tester can be made up easily using local available fittings and water pressure gauge.

# Water Pressure Gauge



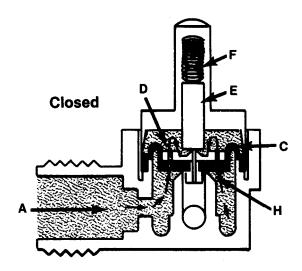
Static pressure: Pressure when valve is closed.

Dynamic (flow) pressure:: Pressure when valve is open and water is flowing.

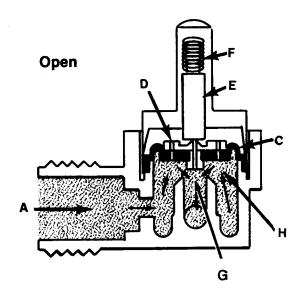
If this pressure is below 30 p.s.i., water valve may not operate properly. If pressure is above 80 p.s.i., water line " hammer" is probable.

### **Water Flow**

The water valve is designed to operate in pressure range of 30 to 120 p.s.i. If for example, the water pressure at the inlet valve is 40 p.s.i., water from inlet "A" is pushing against diaphragm "C" at 40 p.s.i. The solenoid plunger "E" and spring "F" alone are keep the diaphragm in a closed position, blocking the flow of water until the solenoid is energized. To do this, small bleed holes "D" about the size of a pin. are put in the diaphragm to allow water to flow into the plunger area "H". The water in the plunger area equalized the pressure on both sides of the diaphragm. The spring pushes the plunger down into the center of the diaphragm closing center opening, until the solenoid is energized.



stopping the flow of water to the washer.



During the fill portion of the cycle, the solenoid is energized, creating an electromagnetic field and pulling the plunger "E" away from the diaphragm. This allows water to escape out opening "G", thus having little pressure from the supply forces the diaphragm "C" open and allows water to run under the diaphragm and out the outlet of the valve and into the washer. When the washer fills to selected water level, the solenoid is de-energized and the plunger spring "F" pushes the plunger back into the diaphragm opening "G". Water is forced through the bleed holes "D" until an equal pressure is attained on both sides of the diaphragm thus

Assume for a moment, the solenoid is energized and the washer is filling. If a foreign particle reaches the water valve "A" and there are no screens to stop the particle, it continues on into the valve to the diaphragm "C" and the particle lodges in the small bleed hole. This permits the water to continue to flow under the diaphragm, to the outlet and into the tub; because the water cannot pass through the bleed holes to equalize pressure on both sides of the diaphragm to close the diaphragm seat down on the valve seat.

## START CAPACITOR

A start capacitor has been added to decrease inrush current and increase the reliability of the pressure switch. This eases the load on the switches in the motor circuit. Rated at 115VAC, 60 Hz.

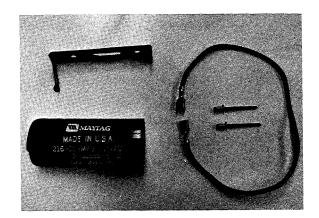
**Note:** Odd cycle models use a 240 volt capacitor.

The start capacitor is attached by rivets.

# CAPACITOR KIT (EXPORT MODELS)

There is available, an accessory capacitor kit to make installation of a capacitor easier. This kit consists of the following items and instructions.

- Clip for capacitor
- Capacitor
- Green No. 17 wire
- Pop rivets
- Moisture shield



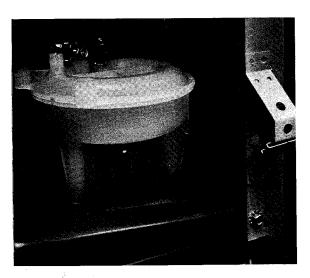
# **POLY PUMP**

The poly pump will pump the water out of the tub to the drain during spin.

The direction of the pump impeller rotation depends on rotational direction of the motor since the pump is belt driven from the motor. During agitation the pump impeller is turning in a clockwise direction with the water being forced back into the washbasket. During spin the impeller turns in the counterclockwise direction for pump out.

# To Remove the Pump:

1. Disconnect hoses from pump.



- 2. Tilt washer and remove pump belt.
- Remove three screws from bottom of base holding pump to base. The mounting holes for the pump on the base frame are slotted for adjustment of the pump belt. Note general position of pump before removing.
- Tilt pump and lift through access hole in base frame.

# **BELTS**

# **Replacing Belts**

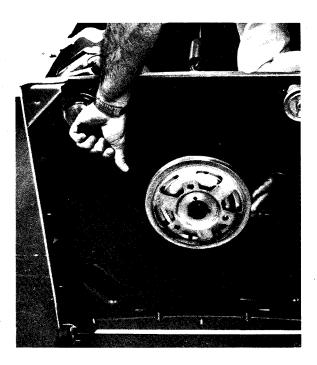
The belts can be replaced using two different methods. One method is tilting the washer back and replacing the belts. The other is by removing the front panel and using the access hole in the base frame. The access hole is put in the base frame in the event the washer cannot be tilted back.

# To change the belts using the access hole:

- 1. Remove front panel.
- Grasp the drive belt at the end that goes on the motor pulley. Squeeze this end together. This will form a loop on the other end. Insert belt under washer with the loop end towards the drive pulley.



 Stick your hand through the access hole and guide the belt around the drive pulley.



- Push motor towards transmission. Loop belt over motor pulley and rotate it into position
- 5. Replace pump belt and check the pump belt tension (refer to section covering adjustment for pump belt tension).
- 6. Replace front panel and check operation of the washer.

### **Belt Guard**

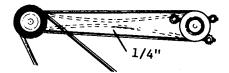
The belt guard is secured to the front panel by three sheet metal screws through the long lip of the belt guard and lower lip at the base of the front panel.

Attaching the belt guard in this manner makes it unnecessary to remove it from the front panel since it will be automatically removed and replaced with the front panel.

# **Pump Belt**

### **Adjustment of Pump Belt:**

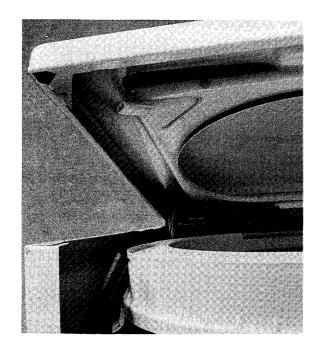
- 1. Pull motor forward so drive belt is tight.
- 2. With washer in an upright position, grasp the pump belt in the middle and flex. With the belt flexed, it should be tightened so that there is approximately 1/4" between the inside surfaces of the pump belt before movement of the motor is felt.



3. If necessary, tilt washer and loosen screws holding pump to base frame and position pump to attain the proper 1/4" dimension.

# **BLEACH INJECTOR SYSTEM**

The bleach injector system is located on the left-hand side of the product. Bleach is poured directly into the bleach inlet, flowing through the bleach hose and into the bottom of the outer tub.



Diluting of the bleach occurs during the fill and agitation portion of the cycle. During the spin a deflector inside of the outer tub prevents the wash water from being pumped up the bleach tube.

### To remove bleach injector system:

If it is necessary to remove and replace the bleach inlet, first remove the front panel and pull bleach hose off of inlet spout.

Remove the screws holding the top cover and raise the top cover slightly. Use a block to hold top cover 3" to 4" above the tub cover. Use a blocking material that will not damage the tub cover.

With top cover in this position press down firmly on bleach inlet until it is removed through the bottom of the top cover. Before replacing the inlet, examine the gasket in the top cover. If damaged, it should be replaced before replacing the new bleach inlet.

# To replace bleach inlet:

When replacing the bleach inlet, apply warm water to the bleach inlet and gasket. Replace gasket first.

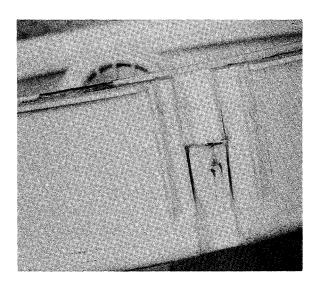
Push the inlet up and into position from the bottom of the top cover. Use silicone sealant on bottom side of inlet to prevent leaks around inlet. Lower the top cover and replace the screws. Replace hose to spout of bleach inlet and replace front panel.

## TUB COVER

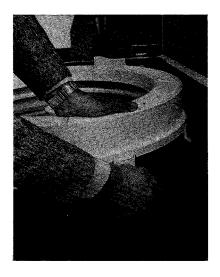
The tub cover is secured to the outer tub with eight (8) tabs. To the rear of the tub cover you will see the flange, sticking upwards. This is what trips the unbalance lever on the lid switch. The tub cover can be removed by pushing downward on the tub cover and pulling tabs out and away from outer tub.

### To Remove Tub Cover:

- 1. Disconnect power from unit before servicing.
- 2. Secure lid to the top cover.
- 3. Remove two screws securing front panel.
- 4. Remove two screws securing top cover to cabinet, and tilt top cover backwards.



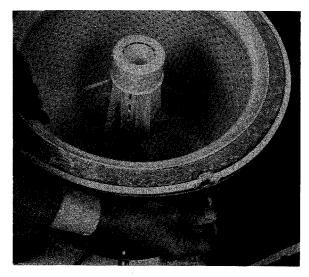
5. Remove tub cover by unsnapping the tabs, securing tub cover to outer tub.



6. Reverse procedure for assembly.

## **BALANCE RING**

The balance ring is connected to the inner tub by three (3) tabs.



You can remove the balance ring by inserting a pencil or other small pin through the three small holes in the outer tub depressing the tabs on the balance ring. Try using a thin piece of cardboard to place between the tab and outer tub once you have inserted the pencil through the hole to depress the tabs. This will allow you to work on the other tabs for easy removal.

Be careful when removing the balance ring. Do not drop on floor.

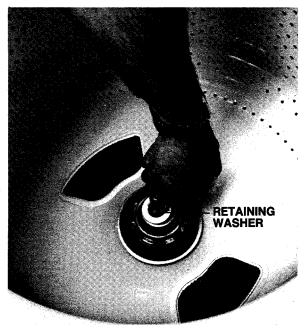
## **CENTER SHAFT SEAL**

This is a water seal that prevents water from getting into the transmission.

#### To remove seal:

- 1. Disconnect unit from power source.
- 2. Remove agitator. Back screw located on the side of the agitator out far enough to pull agitator off the agitator shaft.
- 3. Pry out lock ring for retaining washer.
- 4. Remove retaining washer.





5. Remove Seal by prying out.

Note: When replacing this seal, the outside should be dry and the inside should be lubricated with center seal grease. Small end of the seal must go against agitator shaft collar.

## **Seal Leaks**

Water leaks from the center shaft seal or boot seal can be detected by looking under the outer tub with a flashlight. When looking under the outer tub you will be able to see the bottom of the tub bearing and the bottom of the tub bearing sleeve where it sits on top of the transmission.



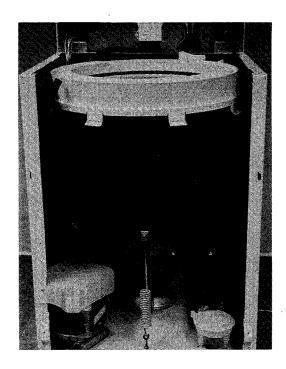
If the water is coming from the slots in the tub bearing, suspect a boot seal leak.

If the water is coming out underneath the bearing sleeve and down onto the transmission, suspect a center shaft seal leak or mounting stem screw leak.

# **INNER TUB**

### To remove inner tub:

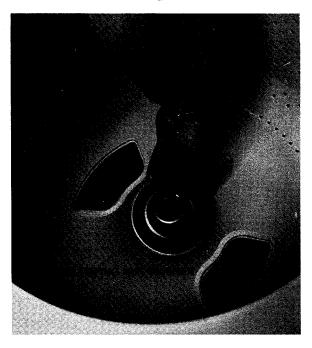
- 1. Disconnect unit from power source.
- 2. Remove front panel.
- 3. Raise top cover.
- 4. Unsnap tub cover from outer tabs and remove tub cover.



- 5. Remove agitator.
- 6. Use spanner wrench to remove clamping nut. This is a left-hand thread so it must be turned clockwise. A mallet will be required to loosen the nut. Use care when striking wrench to prevent chipping the tub.



7. Remove clamping nut washer.



## Replacing tub:

- When replacing the inner tub, rock it back and forth on the mounting stem to make sure it is seated properly.
- 2. Replace washer and nut.
- 3. Tighten nut. Use care not to chip tub.

# **Tub Centering**

If it should be necessary to re-center the tub, use the following procedure:

- 1. Place a 1/2 lb. weight in the tub.
- 2. Allow the washer to reach full spin speed.
- 3. When the washer reaches full spin speed, open the lid and allow the tub to come to a complete stop. The opening in the tub cover should be centered with the opening in the top cover, but with a small portion of the tub cover visible at the back. This visible portion of the tub cover should not exceed 1/4".
- 4. If the proper amount of the tub cover is not visible at the back or the tub is off center on either side, tighten the opposite damper spring and recheck as outlined above.

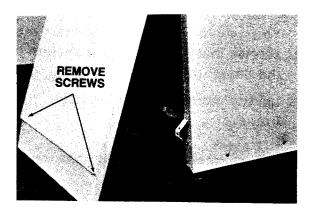
# MOUNTING STEM AND BOOT SEAL

If a water leak occurs it can be detected by removing the front panel and using a flashlight to inspect the tub bearing. If the boot seal is leaking, water will come out through the openings around the tub bearing holder. A symptom of a leak is water around around the inside of the cabinet at the level of the transmission. As water leaks out of the bearing area it will generally pick up some oil. If this is a leak, use the mounting stem repair kit.

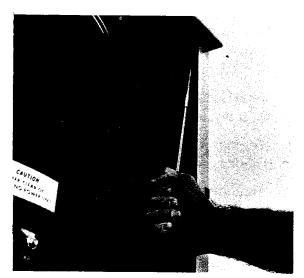
# To Replace Mounting Stem and Boot Seal:

1. Disconnect unit from power source.

2. Remove two screws holding front panel. Pull front panel up from bottom and remove.



3. Remove two bolts holding top cover and raise top cover.



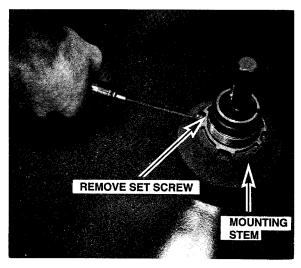
4. Remove agitator.



 Use the Maytag spanner wrench to remove clamping nut. This is a lefthand thread so it must be turned clockwise. A mallet will be required to loosen the nut.



- 6. Remove the clamping nut washer.
- 7. Unsnap tub cover and remove tub cover.
- 8. Remove inner tub.
- 9. Remove the set/torx screw in the mounting stem.



**Note:** When replacing the screw. position wrench as shown in the following photos and tighten screw. With screw securely tightened, the end of the screw will be flush or protrude by 1/6" out of the mounting stem (see following photos). If the screw goes in further than flush it is probably going into the recessed groove. If this happens, back the screw out and tighten the mounting stem some more. Then retighten the screw. The screw must not be seated in the groove.

- 10. Use a Maytag spanner wrench to remove mounting stem. Like the clamping nut, this is a left-hand thread and must be turned clockwise. A mallet will be required to loosen the mounting stem.
- 11. When the mounting stem is lifted off you have access to the "O" ring and boot seal.



- 12. The "O" ring may be removed with a thin blade screwdriver or ice pick.
- 13. Remove boot seal by twisting clockwise. Do not grasp around carbon ring.

### REASSEMBLING THE MOUNTING STEM

- Center seal grease should be used on the mounting stem threads. When the mounting stem has been turned on the center stem and hand-tightened, use the spanner wrench to seat the mounting stem. Tap the spanner wrench several times with a hammer to seat.
- Before inserting the screw into the mounting stem, lubricate the hole in the mounting stem with Maytag Center Seal grease. Be sure to tighten the screw securely.

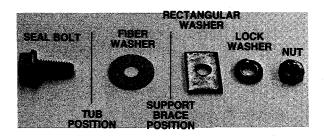
Note: Screw must not be in a water <u>relief groove.</u>

# **OUTER TUB**

### To Remove Outer Tub:

- 1. Disconnect unit from power source.
- 2. Remove inner tub.
- 3. Loosen screw in mounting stem.

- 4. Use a Maytag spanner wrench to remove mounting stem. Like the clamping nut, this is a left-hand thread and must be turned clockwise. A mallet will probably be required to loosen the mounting stem.
- 5. When the mounting stem is lifted off you have access to the "O" ring and boot seal.
- The "O" ring may be removed with a thin blade screwdriver or an ice pick.
- 7. Remove boot seal by twisting clockwise. Do not grasp around carbon ring.
- 8. Loosen clamps and remove drain hose and air dome from outer tub.
- Remove three bolts that hold the outer tub to the tub braces. To facilitate removal of tub bolts, remove outside nuts, lock and retaining washers and push tub bolts through the tub. Lift off outer tub.



Note: The location of tub and seal bolt, fiber washer, brace, retainer washer, and washer and nut. 10. Remove outer tub.

### **REPLACING OUTER TUB**

1. When replacing tub bolt nuts, just get them started. Do not tighten them until you have the front bolt also started. Using the brake package tool, you can hook the front brace to apply pressure to move the brace against the tub. This makes it easier to get the lock washer and nut on the front tub bolt.

### REMEMBER -

The two rear bolts are longer than the front bolt. DO NOT use a long tub bolt in the front position.

- 2. Replace pressure switch air dome hose and tub outlet to pump hose.
- Install mounting stem and tighten in a counterclockwise direction.
   Observe the location of the set screw hole in relation to the water relief grooves from the top of the stem (before the center seal is installed). The screw must not end up in one of the grooves. Tighten as needed.
- 4. With the mounting stem properly installed, insert the center seal with the small end down.
  - Install the stainless steel washer and retainer spring clip.
- 5. Reinstall the wash basket (inner tub).
- 6. Position tub cover with trip bracket parallel to back panel. Snap the tabs into place on the outer tub

# **TUB BEARING**

The tub bearing is a sintered metal bearing molded in rubber to fit with the outer tub. The inner face of the mounting stem tightens down on the bearing sleeve locking it to the power unit. The sleeve always turns with the power unit inside the outer tub bearing in spin.

### To Remove Outer Tub Bearing:

- 1. Disconnect unit from power source.
- 2. Remove outer tub.
- 3. Because of the porcelain tub and molded retainer, it is not practical to drive the tub bearing from the tub. To remove the bearing from the tub, elevate the tub so that the porcelain drain tube clears the floor. This could be done by placing a 2x4 or a doubled over corner post under the tub.
- 4. Apply pressure on the bearing pushing it from the tub. This can be done by standing on the bearing.

### To Replace Tub Bearing:

Turn tub over, starting bearing into tub cover.

Note: Caution should be exercised to see that the tub bearing is started into the tub straight to prevent and erratic or egg-shaping when seated in the tub.

 Press bearing into place by applying pressure. This may also be done by standing on the bearing. To avoid getting dirt in the bearing, place a protective cloth over the bearing before standing on it.



**TRANSMISSION - ORBITAL** 

#### How it works:

The helical drive mechanism used on the washer is simple---not requiring a special device or linkage normally used to shift the washer from agitation to spin.

As you look at the following drawings, remember that the parts shown in dark (damper, brake housing, brake drum and outer race of the spin bearing) are attached to the base and never rotate.

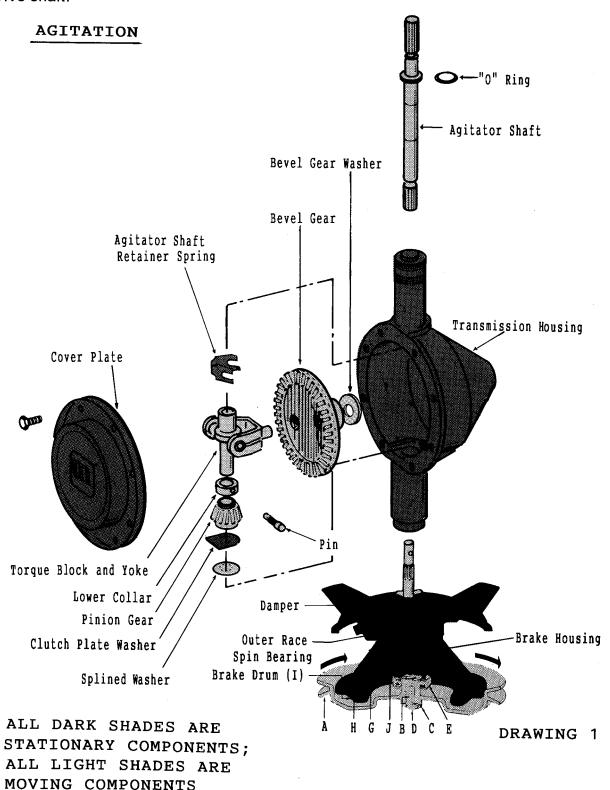
A reversible motor, helical (threaded) drive shaft and pulley make up the drive mechanism. The pulley, threaded onto the helical drive shaft, moves either up or down the shaft dependent on the direction it is turned by the drive motor through a drive belt.

# Agitation

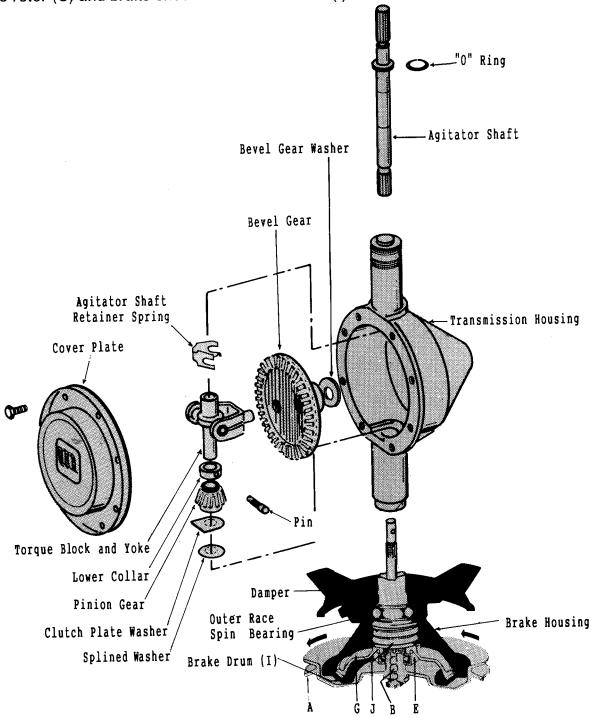
With the pulley (A) being turned clockwise as shown in Drawing 1, it moves down the helical drive shaft (B). As it rotates down the shaft, a lug (C) on the pulley comes against drive lug (D)

which is splined to the helical drive shaft.

At this point the drive shaft rotates with the pulley. The pulley bearing (E) which is sitting on top of the pulley, rotates with the pulley, drive lug and drive shaft. Inside the transmission, the pinion gear, splined to the drive shaft, rotates and drives the bevel gear. As the bevel gears rotates, the torque block and yoke assembly causes the agitator shaft to oscillate, creating the water action for wash.



When the motor reverses, the pulley will turn in the direction shown in Drawing 2. This causes the pulley (A) and bearing (E) to turn. The pulley climbs the threads on the helical drive shaft (B) overcoming the force of the brake spring (J) and lifts the brake rotor (G) and brake shoe off the brake drum (I).



ALL DARK SHADES ARE STATIONARY COMPONENTS; ALL LIGHT SHADES ARE MOVING COMPONENTS

DRAWING 2

As the pulley climbs the shaft and overcomes the force of the brake spring there is a downward pull on the shaft.

Inside the transmission are two washers that act as a clutch. This friction clutch consists of the bronze washer and clutch plate washer. The bronze washer is splined to, and rotates with the drive shaft. Between the bronze washer and the pinion gear is the clutch plate washer. It fits into a "D" slot in the housing, which keeps it from turning.

As the helical shaft is pulled downward the two clutch washers under the pinion are forced together. This is done rapidly and slippage occurs only during the first two or three revolutions, until the film of oil between the two clutch washers is forced out.

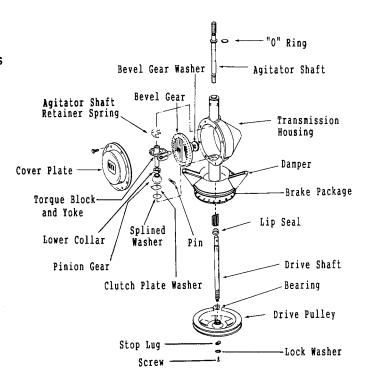
The drive occurs when the washers are forced together and pulley has climbed the shaft as far as it can. The driving force has locked the pulley, brake rotor and transmission together. All will turn as a unit in the same direction as the pulley is turning, causing the tub to spin (counterclockwise viewed from the top).

#### Spin Cycle Completed

When the washer reaches the end of the spin cycle, the driving force is removed. Thus, there is no force supplied to lock the components together or compress the brake spring. The momentum of the spinning tub drives the pulley downward allowing the brake spring to press the brake rotor down. The rotor presses the oil in the lip of the brake drum out of the way and contacts the drum surface and stops the tub.

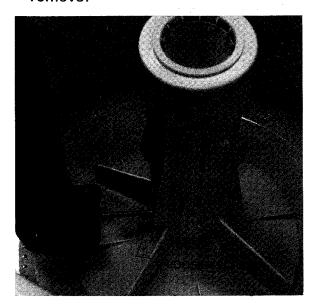
Replacement of the internal transmission components can be done

without removing the transmission from the washer. Therefore, you will no longer replace the entire transmission assembly. Any internal component that fails must be replaced as needed.



## TRANSMISSION REPAIR **PROCEDURE**

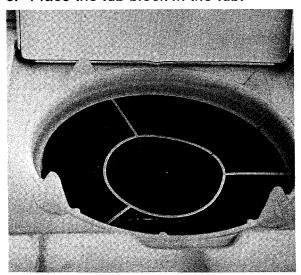
- 1. Disconnect unit from power source.
- 2. Loosen the screw in the agitator and remove.



3. Remove the retaining clip for shaft seal. This is located in the top of the mounting stem and is easily removed with a screwdriver.

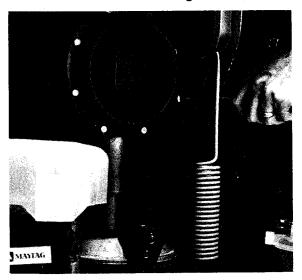


- 4. Remove the front panel.
- 5. Lay the washer on its back and remove the belts.
- 6. Place the tub block in the tub.

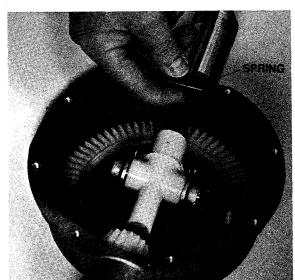


- 7. Place an oil catch pan under the center hub of the transmission. The motor cover will do for this.
- 8. Remove the eight (8) hex head bolts with a 7/16 nut driver. Be sure the bolt heads are facing up. This will insure that you will not get oil all

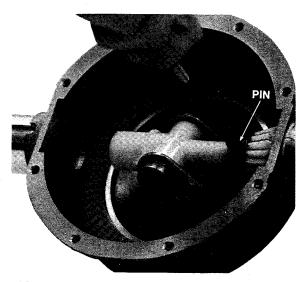
over the back of the washer should the cover come loose. Cut around the cover to separate silicon Maytag RTV sealer used as a gasket.



- 9. Remove the cover plate (it may be necessary to pry the plate off with a screwdriver). Carefully rotate the transmission, dumping the oil into your catch pan.
- 10. Remove the agitator shaft retaining spring by pulling it out and off the agitator shaft. Care should be taken when removing.



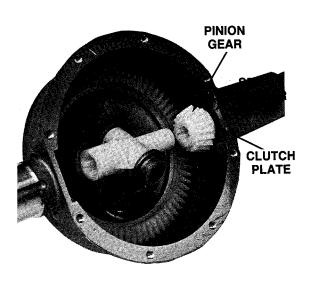
11. Remove the lower collar pin with a 3/16" Allen wrench.



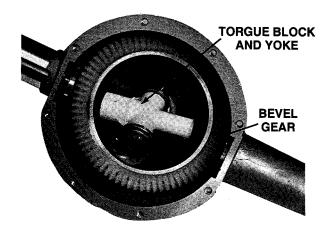
- 12. Grasp the drive pulley and slowly pull the center shaft out. Only a small amount of force will be needed to remove the shaft. Be careful not to damage the lip seal at the bottom of the transmission.
- 13. Pull the agitator shaft out through the tub. Remove the "O" ring from shaft.

**Note:** You may have to pull hard on this as the oil in the torque block forms a suction.

14. With the agitator and drive shafts removed, simply lift out the following parts: lower collar and pinion gear, followed by the clutch plate and splined washer which are both located under the pinion gear.



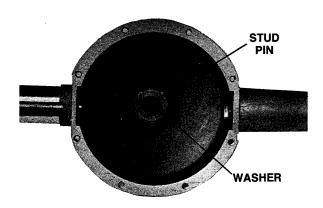
15. The torque block and yoke can now be removed as can the bevel gear. Underneath the bevel gear is a spacer washer. Remove it.



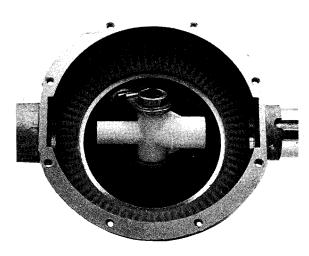
16. At this point, all components to be reassembled should be cleaned. Also, clean any silastic from the transmission housing and cover before reassembling.

#### REASSEMBLY

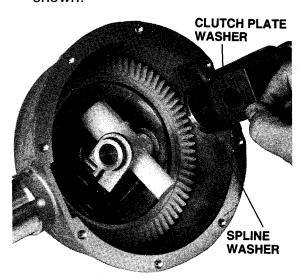
 Install spacer washer followed by the bevel gear on the center stud pin. Apply thin film of oil on stud before installing gear.



Place pivot stud of torque block yoke into the hole in the bevel gear. Point the unsplined portion of the torque block towards the bottom of the washer.

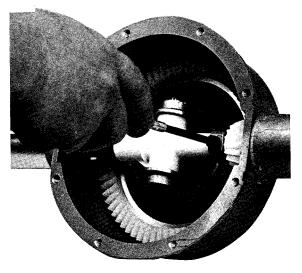


3. Place the copper splined washer on the bottom and clutch plate washer on top, and lay them in the slot as shown.



- 4. Place the pinion in line with the drive shaft hole, then push the drive shaft through the various components until it is flush with the top of the pinion gear. Some minor twisting of the shaft will be required in order to line up all of the splines.
- Now place the lower lock collar between the unsplined portion of the yoke and pinion gear. Push the shaft into the smaller unsplined portion of the torque block and yoke.

 With all of the parts of this segment aligned and in place, install the pin for lock collar and tighten. Use thread locking compound on pin threads.

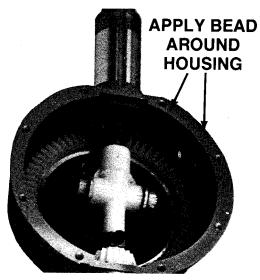


- 7. Insert the agitator shaft in through the top of the transmission housing. Align the splines and push together.
- 8. Place the agitator shaft spring into the groove portion of the agitator shaft. Squeezing the spring together will be required before it can be inserted into the groove.

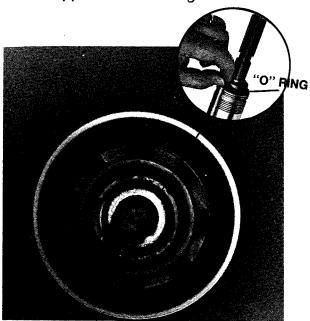


- Rotate the drive gear (counterclockwise) to check the transmission for proper operation.
- 10. Apply a new bead of Maytag RTV silastic to the edge of the trans-

mission housing. Fill with Maytag transmission oil. One bottle is a complete fill.



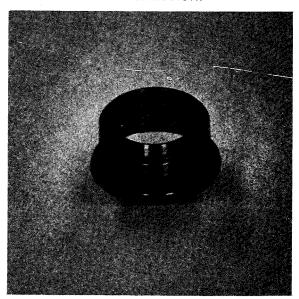
- 11. Place the cover on the housing. Insert the eight (8) bolts and tighten. Be sure not to over tighten these eight (8) bolts so as to prevent stripping the threads.
- 12. Reinstall the belts and front panel. Place washer upright and remove the tub block.
- 13. Insert the "O" ring over the agitator shaft. With the use of the two screwdrivers, work the "O" ring over the collar and back into the "V" groove between the agitator shaft collar and the upper stem bearing.



- 14. Install shaft seal, retaining washer and snap ring into the mounting stem.
- 15. Reinstall agitator and lock in place by tightening set screw.
- 16. Reinstall washer, level and check for proper operation.

#### LIP SEAL

A lip seal is used to keep the oil in the transmission. It is located at the bottom of the transmission and is pressed into a bore in the center tube. The center shaft is inserted through the seal. The lip of the seal presses against the center shaft creating a seal to keep the oil inside the transmission.

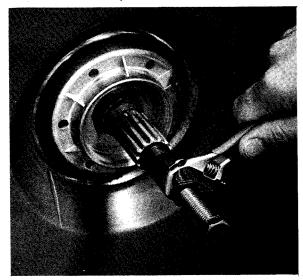


It is only necessary to remove the drive pulley to gain access to the lip seal.

#### Removing the seal:

- 1. Disconnect unit from power source.
- 2. Tip washer to gain access to bottom pulley. Remove dust cover from center of pulley. Remove #2 Phillips screw & lock washer from bottom of drive shaft.

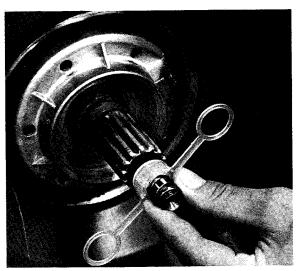
- 3. Pry drive lug off drive shaft.
- 4. Spin drive pulley off shaft (c.c.w. from bottom).



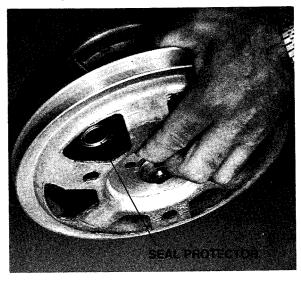
5. Use the lip seal tool part number to remove the lip seal from the center tube. This tool is screwed into the lip seal and the lip seal is removed by turning the bolt against the center shaft.

Note: You may need to hold the transmission when tightening the lip seal tool and when replacing the lip seal to keep the transmission from rotating.

- 6. Clean lip seal bore in the center tube with choke cleaner to remove any oil. Make sure area is clean and dry.
- 7. Press new lip seal over Seal-Protector. The Seal-Protector is designed to protect the seal area of the lip seal from rolling over or tearing as the seal is pressed into the center tube of the transmission.
- 8. Slide assembly over square thread of center shaft until the lip seal starts into the center tube bore.



9. Turn drive pulley onto the center shaft and against Seal-Protector. Tighten pulley to press lip seal into center tube bore. Back pulley off and check to make sure lip seal is pressed into position (flange of lip seal should be against end of center tube).



- 10. Remove pulley.
- 11. Using the loops, remove Seal-Protector and discard.
- 12. Replace pulley and belts. Be sure rotor bearing is on drive pulley correctly with "cup" of bearing over hub of pulley.
- 13. Place washer in upright position. Replace front panel and remove tub

block. Connect washer and check for proper operation.

#### DAMPER ASSEMBLY

The damper assembly consists of a damper, tub support arms and centering springs.

#### Damper Pads

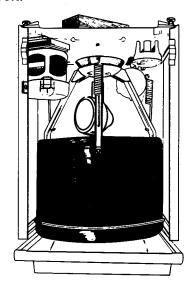
Dry or poorly lubricated damper pads can result in a rubbing noise during the beginning and end of the spin cycle. If this condition is encountered, the damper pads should be lubricated or replaced.

When you order damper pads and/or a damper or a base, a quantity of silicone grease is also provided. The quantity is sufficient to lubricate the three damper pads. The silicone grease should be applied by hand and should thoroughly cover each pad. Over lubrication is not necessary. Although only a small amount of grease is furnished in the container, it is adequate to do the job.

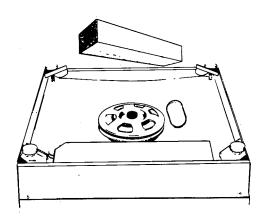
#### To replace or lubricate damper pads:

- 1. Disconnect unit from power source.
- 2. Remove two screws holding front panel and remove front panel.
- 3. Remove two bolts holding top cover and raise top cover.
- 4. Remove nuts from three eyebolts. The position of the nuts on the eyebolts can be marked by placing strips of electrical tape around bolts above nuts before loosening.
- 5. Remove drive belt.

- 6. Tip washer back and lay a 4" x 4" wood block under drive pulley.
- 7. Set washer down on top of the wood block.

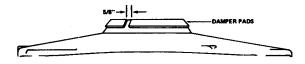


8. The complete assembly of the tubs and damper should be pushed up from the base far enough to get to the damper pads.



- 9. Scrape old pads from base.
- 10. Use a degreasing agent such as alcohol to remove any grease from area.
- 11. Apply rubber adhesive part number to area where old pads were removed.

12. Apply pads to base and let dry. The top surface of pad should be located 3/32" below center opening in base. The distance between pads should be about 5/8".



- 13. Lubricate damper pads with silicone grease.
- 14. Assemble washer.
- Check tub centering and adjust if necessary (refer to section on tub centering).

## **Damper Replacement**

## If damper replacement is needed:

- 1. Disconnect unit from power source.
- 2. Remove front panel.
- 3. Remove all hoses from outer tub.
- 4. Lay washer on its back (watch the lid).
- 5. Remove belts, pulley and brake package.
- Place washer in an upright position and remove nuts from centering springs (mark location).
- 7. Lift entire assembly, tubs, transmission and damper, out of the

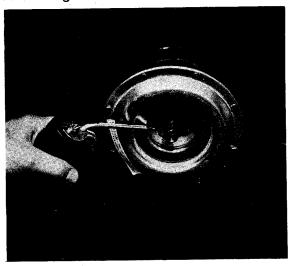
- washer and lay on the floor. Use caution when doing this.
- 8. Remove the bolts from the damper ears that hold the tub braces.
- 9. Lift damper clear of the tub braces and remove from washer.
- Install new damper using reverse order. Make sure boss for retainer clip is aligned toward pump.

## BRAKE PACKAGE AND RADIAL BEARING

#### **DRY BRAKE**

The normal symptom of a dry brake package is a screeching noise at the end of the spin cycle as the tub comes to a stop.

The brake can be lubricated without removing it from the washer.



#### To Lubricate Brake:

- 1. Disconnect the electrical supply to the washer.
- 2. Put tub block in tub and lay washer back far enough to get to the pulley and brake.

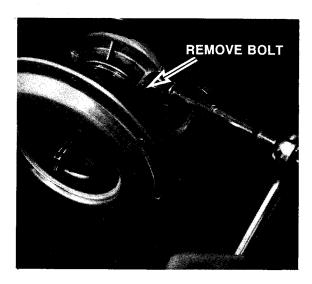
- 3. Remove drive pulley.
- Use pulley dust cover as measure and squeeze two capfuls of transmission oil over brake package lip.
- 5. Put the pulley on the shaft and turn until the brake is disengaged. With the brake disengaged, the oil will run into the brake package. Turn the pulley several times to insure proper lubrication. Reset stop lug and install dust cap.

#### **BRAKE DISASSEMBLY**

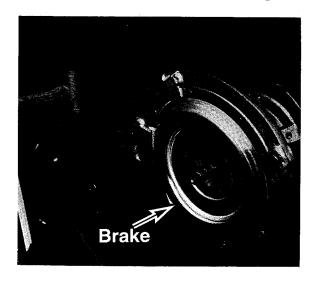
The brake must be released before the washer will spin. If the brake is stuck, it won't release. In this case, the brake must be repaired or replaced.

After drive pulley has been removed, the brake assembly can be removed as follows (power unit in place):

- 1. Disconnect unit from power source.
- With tub block in place, the tubs and power unit will be parallel with the cabinet. Remove hex bolt and retainer clip in damper holding the brake package.
- 3. Use the brake tool to unscrew the brake package assembly from the damper. When the brake package is free, pull out to disengage it from the spline surface of the drive tube. The brake package is accessible now for disassembly and repair.

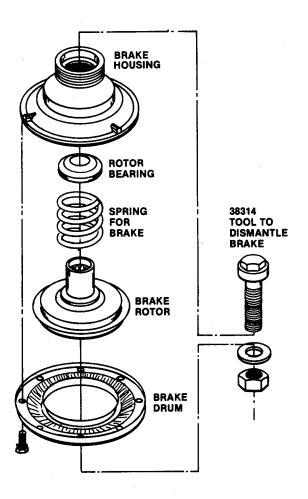


 After brake package has been removed, the radial bearing may be removed from top of brake package.





#### To Disassemble the Brake Package:



The brake assembly contains a spring which is partially compressed and exerting 200 lbs. pressure. Use tool to dismantle brake. Because of this spring, CAUTION MUST BE TAKEN when disassembling the units.

Use tool to dismantle brake, to hold brake package spring prior to dismantling the brake package. Remove screws holding brake package together then slowly loosen the compression tool until the spring tension is completely released. Brake components are now accessible for service. Reassemble by reversing the procedure.

When reassembling the brake, fill the rubber dust cap which fits over the end of the drive pulley with transmission oil.

Then pour the oil over the lip of the brake package and replace the dust cap. Use two capfuls.

#### To Replace Brake Package:

- 1. Place radial bearing in top of brake package.
- 2. Insert brake package over drive tube splines.
- 3. Start threads of brake package into damper turning it by hand.
- 4. Be sure that tub block is in place keeping tubs level so as to prevent binding on brake package threads.
- 5. When turning brake package into the damper, allow power unit to turn so that you do not have to overcome the friction of the brake.
- 6. When threaded tight, use the brake tool and hammer to seat brake package firmly in place.
- 7. Locate retaining clip and tighten damper bolt securely into damper.

Note: Once the brake has been reinstalled, turn the pulley on the shaft until the brake is disengaged. With the brake disengaged, the oil will run into the brake package. Turn the pulley several times to insure proper lubrication.

## To Service the Brake without Removing it from the Washer:

- 1. Remove drive pulley.
- Replace every other brake drum retainer screw (total of eight) with a 1 1/2" long 8-32 machine screw.
   Snug these screws up against brake drum.
- 3. Remove the four remaining brake drum screws and then alternately loosen the four long machine screws

- just inserted. The idea is to lower the brake down evenly to avoid bending it.
- 4. As the screws are loosened, the brake spring will reach the limit of its extension. You will run out of spring pressure before you run out of screw thread. Remove brake drum and gasket.
- Pull brake rotor assembly from spin tube spline. Inspect liner for wear or damage. Replace if questionable.
- 6. Wipe inside of brake housing before reassembly.
- 7. Inspect spring cap for wear. Wear indicates sticking radical bearing.
- Apply grease to inside of rotor splines before reassembly. Use new gasket.
- Tighten machine screws alternately to compress brake drum back to housing. Install four original screws and replace "service" screws.
- 10. Add two ounces of auto. trans. lube over lip of brake drum.

## DRIVE PULLEY AND ROTOR BEARING

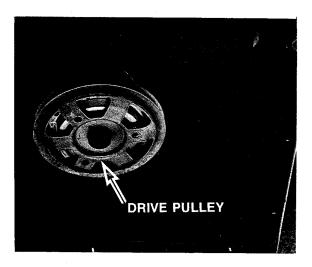
The drive pulley must be removed to gain access to the rotor bearing or to remove the brake package.

#### To Remove Pulley:

1. Remove drive and pump belts and rubber cap covering hub of pulley.

- 2. Remove screw and washer from bottom of drive shaft.
- 3. Remove the splined drive lug from the drive shaft.
- Turn pulley counterclockwise to remove it from the helical shaft. The rotor bearing is located above the drive pulley.

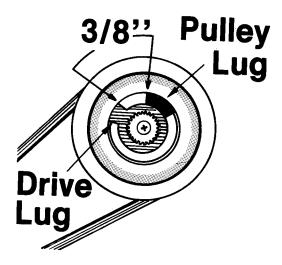
Note: There is a top and bottom to the rotor bearing. When it is positioned correctly, the top of the bearing and the pulley hub will be about even. If you put the rotor bearing on upside down, you will have no brake.



**Note:** When the drive pulley is replaced, the drive lug must be properly positioned.

#### To Adjust Drive Lug:

Turn the drive pulley onto the shaft clockwise until all play is taken up. Holding the pulley in this position, the distance between drive and pulley lugs should be 3/8". Turn pulley counterclockwise and check to see that the drive lug and pulley are making contact.



#### CAUTION:

There should always be a clearance between the bottom of the pulley and the top of the stop lug to prevent the drive pulley from dragging on the drive lug, forcing it off the shaft.

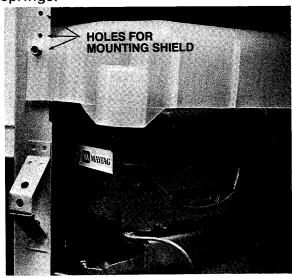
#### **MOTOR CARRIAGE**

The motor carriage consists of an upper and lower section. The lower section is mounted to the base frame. The upper section is used to mount the motor. The lower section has two square glides on each side which engage in a track on each side of the upper section. Two tension springs are attached between the two sections. When removing springs note location of the holes.

During agitation the motor pulley rotates in a clockwise direction as viewed from the top of the motor. The tension of the two springs keeps the motor pulled toward the front of the washer causing the motor pulley to tighten against the drive belt.

During spin the motor pulley rotates in a counterclockwise direction as viewed from the top of the washer. The initial surge caused by the reverse torque of the motor pulls the motor along the track to the rear. The drive belt slips in the drive pulleys so the motor does not absorb the full starting impact and weight of the full tub.

As the inertia of the tub is overcome, the motor is pulled ahead by the tension springs allowing the drive belt to settle into the motor pulley and gradually build up spin speed. The drive belt tension during spin is automatically provided by the two motor tension springs.



#### **MOTOR REMOVAL**

The drive motor is attached to the upper section of the motor base by the motor thru-bolts and nuts. Motor replacement necessitates removing the motor base from the washer base.

- 1. Disconnect unit from power source.
- 2. Remove two screws holding front panel and remove panel.
- 3. Remove motor cover.
- 4. Remove machine harness wires from motor switch terminals.
- 5. Remove belts.
- Remove three screws holding motor base to base frame and remove motor base and motor.

- 7. Remove motor pulley.
- 8. Disengage tension springs and remove mounting nuts. (To remove two of the nuts, align upper and lower sections and insert wrench through the slots into lower section.)

To remove motor from bracket, stand motor (shaft up) and lift off. With motor removed, carriage and glides are accessible for service.

Clean the motor base of any dirt or lint. Replace motor on motor base and to base frame. Lubricate the track and glides with Maytag poly oil. When motor base is attached to base frame, mount with slotted end of lower carriage to the back. Reattach motor ground wire.

After the motor has been replaced, it will not be necessary to check or make a drive belt adjustment as the correct tension is automatically applied by the two motor tension springs. It will, however, be necessary to check the pump belt for proper adjustment.

#### To remove motor from motor carriage:

- 1. Remove pulley.
- 2. Disengage and remove the tension springs.
- Remove carriage mounting nuts (to remove two of the nuts, align upper and lower sections and insert wrench through the slots in the lower section).

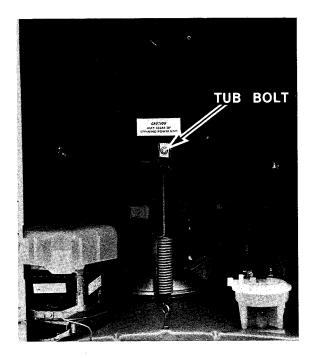
With motor removed, carriage and glides are accessible for service. Clean the motor base of any dirt or lint. Lubricate the track and glides with poly lube grease.

#### To replace motor:

- 1. Assemble carriage sections.
- 2. Mount motor to carriage.
- 3. Install pulley on motor shaft (position so the end of motor shaft is about 1/32" less than flush with bottom of pulley).
- 4. Insert assembly through base, insert tabs in slots.
- 5. Replace the two rear screws that secure lower section to base.
- 6. Replace both belts.
- 7. Replace the front screw that secures lower section to base.
- 8. Attach wire harness and ground wire.
- 9. Replace motor shield.

After the motor has been replaced, it will not be necessary to check or make a drive belt adjustment as the correct tension is automatically applied by the two motor tension springs. However, it will be necessary to check the pump belt for proper adjustment.

The motor base consists of an upper and lower section. The lower section is mounted to the base and remains stationary.



The upper section is used to mount the motor. The upper section has four square glides which engage in a track on each side of the lower section. Two tension springs are attached between the two sections.

During agitation the pulley turns in a clockwise direction as viewed from the top of the motor. The motor is pulled towards the front of the washer causing the motor pulley to tighten against the drive belt.

During the spin, the motor turns in a counterclockwise direction. The initial surge caused by the reverse torque of the motor pulls the motor along the track to the rear. The drive belt slips in the motor pulley so the motor does not absorb the full starting impact and weight of the full tub.

As the inertia of the tub is overcome, the motor is pulled forward by the tension springs allowing the drive belt to settle into the motor pulley and gradually build up spin speed. The drive belt tension during spin is automatically provided by the two motor tension springs. The drive belt serves as a clutch.

#### **Motor Ground Wire**

A 7" green ground wire is attached to the right-hand front of the motor carriage to the washer base. This ground wire provides additional protection to the service technician. To maintain all grounding provisions provided with the appliance, the ground wire must be reinstalled any time removal of the wire is required.

#### **Motor Shield**

All washers use a polypropylene motor shield. The polypropylene shield is molded in the form of a circular cover and is secured to the cabinet with one screw.

The purpose of the shield is to keep water off of the motor in the event of a leak. If a motor is removed, the shield should always be put back in place.

#### **MOTOR FAILURES**

#### CAUTION...

If the washer won't agitate or spin, check motor with a motor test cord. See... Motor Test Cord, in Section 1 of this manual for procedure. This cord enables you to check the motor (without removing it) independent of other components.

#### **Motor Tension Springs**

Note: Replacing the tensions springs involves working around an electrical component - the motor. If replacing the tension springs, always unplug the washer from the power source to avoid any chance of electrical shock.

The motor tension springs may be removed and replaced without removing the motor base from the base frame. This may be done by using needle nose pliers and disengaging the spring hooks from the tabs and lower section. Both springs are on the left side of the motor shaft.

## **SERVICE PROCEDURES (1997) DEPENDABLE CARE**

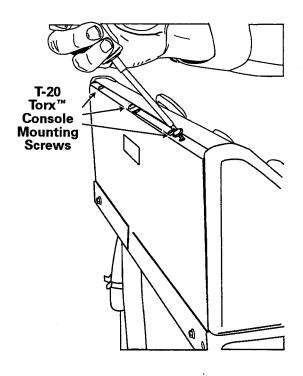
The following procedures outline those procedures which are unique to the new 1997 Maytag Automatic washer line. Otherwise, the service procedures are the same as those outlined in the automatic washer service manual, part no. 16001145.

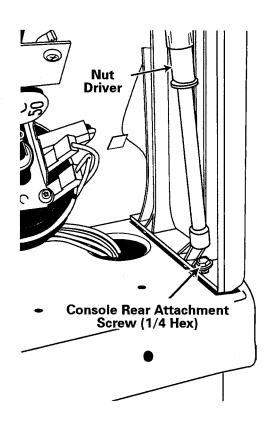
#### CAUTION

There can be risk of injury or electrical shock while performing services or repairs. Injury or electrical shock can be serious or even fatal.

#### **CONSOLE REMOVAL:**

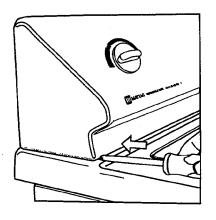
 Remove the three screws securing the console rear cover plate across the rear top edge of the console.

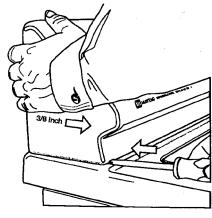




 Tip the console rear cover plate back. Use an extension on the nut driver to access the two 1/4" hex screws located inside the console along the lower edge of the endcaps. Remove the two screws. The console is secured to the top cover by seven locking feet which engage through slots in the top cover.

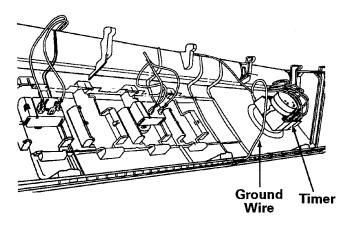
- 3. Locate a small slot in the front of the console underneath the endcap.
- 4. Place a small flat blade screwdriver horizontally into the slot. Carefully apply an inward pressure with the screwdriver to disengage a retaining tab located underneath the endcap of the console.
- 5. While carefully applying inward pressure through the slot, grasp the endcap and slide the end of the console forward 3/8". This will disengage the hook feet under the console which engage through slots in the top cover. Repeat this procedure to the other end of the console.
- After laying a dropcloth across the top cover of the washer, carefully lift and roll the console forward onto the top cover. You now have access to the console components and wiring.
- 7. To Reinstall: Roll the console back into an upright position, engaging the locking feet into the slots in the top cover. Slide the console rearward till you hear a "click". This ensures the locking tabs have engaged. Replace the two screws to attach console to top cover. Replace the three screws to attach console back to console.





#### **SWITCH REMOVAL & REPLACEMENT:**

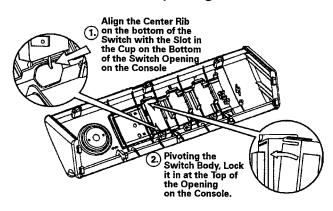
Switches are retained in the console by means of locking tabs on the switch bodies which engage with retaining features on the console. Switches may be mounted either horizontally or vertically in the console. Please note orientation of the switches prior to removal and replacement. Removal of rotating knobs will be necessary prior to switch removal. Knobs are removed by pulling the knob from the



shaft of the switch. Buttons are not removed prior to switch removal.

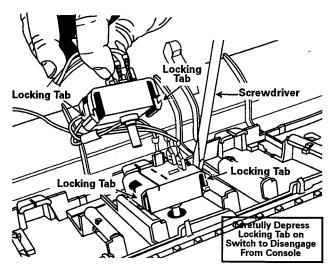
#### **Vertical Switches (Push Button)**

- To remove Depress the tab at the top
  of the switch with a screwdriver to
  disengage the tab from the console,
  then pivot the switch away from the
  console to remove.
- 2. To replace Align the rib on the bottom of the switch with the slot in the console, then pivot the switch up into the console till the tab engages the console securely. Check to be sure the locating tabs on either side of the switch's lower alignment rib are in position to properly center and lock the switch into the lower part of the console switch opening.



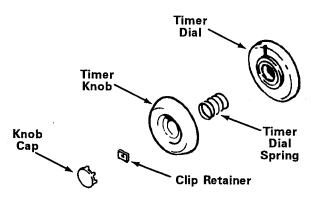
## **Horizontal Switches (Rotary)**

- To remove Depress the locking tab on the switch to disengage the switch from the locking tab on the console. Pivot the switch from the console.
- To replace Position one side into the console and pivot the other tab into the console and apply enough pressure to engage the tab into the console.

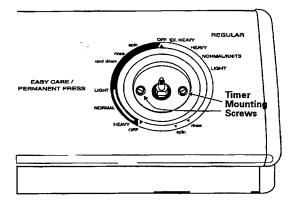


#### Timer Removal

- 1. Remove timer knob, by removing the cap on the face of the knob.
- Slide the retainer "C" clip off the timer shaft. Carefully lift the knob and timer dial from the timer shaft while securing the spring between them.



Remove the two timer mounting screws now exposed on the face of the control console.



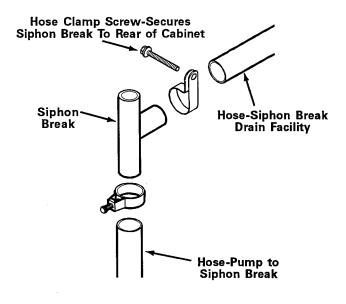
## **INSTALLATION (1997) DEPENDABLE CARE**

The following installation procedures outline those procedures which are unique to the new 1997 Maytag Automatic washer line. Otherwise, the installation procedures are the same as those outlined on pages 1-3 thru 1-13, in the automatic washer service manual, part no. 16001145.

### **Drain Facility**

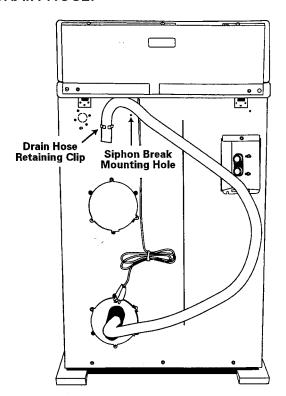
When installing the drain hose, the hose must be elevated. This can be done by placing the drain hose in a standpipe no less than 36" high. The inside diameter of the standpipe should be no less than 1-1/2". Always avoid a tight fit between the drain hose and standpipe to prevent the chance of siphoning water from the washer. The loop in the drain hose must always be above the maximum water level in the washer.

If a 36" standpipe is not available, place the drain hose into the clip on the back of the washer cabinet. Then add a drain hose extension from the gooseneck to the standpipe. For floor drain installations, a 201112 siphon break (accessory) should be installed. To install the siphon break:



- Hold the siphon break in place and cut the drain hose. Assemble the drain hose to the siphon break with clamp as shown. The closed end of the siphon break should point up.
- Mount the siphon break and drain hose going to drain facility as shown securing hose clamp screw through the hole provided at the upper left rear panel of the cabinet.

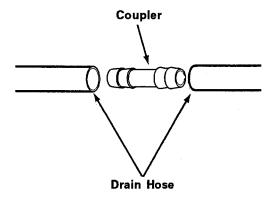
**Note -** when the drain hose is placed into the standpipe there **must not** be a lot of excessive hose left over which is allowed to loop around on the floor. This condition can cause a kinked drain hose resulting in slow draining. *REMOVE EXCESS DRAIN HOSE*.



If it is necessary to extend the drain hose from the siphon break to the drain facility, attach the extension hose section to the siphon break. Use 216015 coupler to connect extension and drain hoses. Do not extend the "gooseneck" end.

If the drain hose is to be shortened, cut hose behind the gooseneck. Remove as much as necessary. Use 216015 accessory coupler to splice gooseneck to hose. Do not cut "gooseneck" end off.

When used properly, hose clamps are not required. With the excess section of the hose removed, join the two ends using the coupler. Be sure each section of hose is securely pushed over the end of the coupler and the hoses joined at approximately the middle of the coupler.



## **SECTION 4. TROUBLESHOOTING**

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Always disconnect power supply before making any continuity checks or resistance readings. Always use caution when doing voltage tests.

## **ELECTRICAL FAILURES - MICROPROCESSOR MODELS**

SYMPTOM	CAUSES	TEST PROCEDURE	SOLUTION
Control will not function and no pad will respond.	No power to trans- former.	Check transformer input for 120 VAC.	Reset breaker, replace fuse, plug in machine.
	Transformer	Check transformer for 10 and 26 VAC outputs.	Replace transformer.
	Wire Harness	Check for 10 and 26 VAC at the control board.	Replace wiring.
	Touch Pad	Plug electric ribbon of a new touch pad assembly into ribbon connector.	Replace membrane switch.
	Control Board	If all above checks pass	Replace control board.
Control will not stay on unless a program pad is held down.	Control Board	Replace control board.	Replace control board.
An LED or display segment won't light.	Control Board	If any L.E.D. or segment won't light	Replace control board.

#### CAUTION

Always disconnect power supply before making any continuity checks or resistance readings. Always use caution when doing voltage tests.

SYMPTOM	CAUSES	TEST PROCEDURE	SOLUTION
Relay, water valve, or lid switch will not function.	Transformer	Check transformer for 26 VAC output.	Replace transformer.
	Wire Harness	Check for 26 VAC on the control board.	Replace wiring.
	Control Board	Check fault codes if displayed.	Replace control board.
	Wire Harness	Check for 24 VDC at the board and the relays.	Replace wiring.
	All relays have failed open.	Turn on machine and check each relay for contact closure. Check relay coils for continuity.	Replace relays.
Motor runs contin- uously	Run Relay Engaged	Check for constant 24V to relay coil (control board problem) check for stuck relay contact (relay problem)	Replace relay or control board
Washer will only agitate	Reversing Relay	Check for 24V to coil Replace reversing on spin. Check coil relay.	
Washer will only spin	Reversing Relay	Check for constant 24V to relay coil (control problem). Check for relay problem.	Replace relay or control board.

#### CAUTION -

Always disconnect power supply before making any continuity checks or resistance readings. Always use caution when doing voltage tests.

SYMPTOM	CAUSES	TEST PROCEDURE	SOLUTION
Washer will not spin or agitate	No power to washer	Check 120 VAC input to the washer	Plug in washer. Reset breaker or replace fuse.
	Lid Open	"1E" will persist in washer display if lid isn't shut	.Shut lid
	Lid Switch	Check for continuity across lid switch with the lid shut	Replace lid switch
	Motor	Check for continuity from control board output to motor run relay and from relay contacts to the motor	Replace wiring/Replace motor
	Control Board	Perform motor check	Replace control board
	Motor Run Relay	Put washer into spin and check for relay contact closure	Replace motor run relay
Washer spins instead of agitates	Reversing (Spin) Relay	With power off check relay for welded con- tacts	Replace reversing relay
	Control Board		Replace control board
Washer agitates in spin cycle	Washer agitates in spin cycle	Check for 24V across relay coil - (control board problem)	Replace wiring, relay coil, or control board
	Reversing (Spin) Relay	Put washer into spin and check for contact closure	Replace relay
	Control Board	Check for continuity from spin relay to control board output and from spin relay contacts to the motor terminals.	Replace control board
	Wire harness		Replace wiring

#### **CAUTION** -

Always disconnect power supply before making any continuity checks or resistance readings. Always use caution when doing voltage tests.

SYMPTOM	CAUSES	TEST PROCEDURE	SOLUTION
Washer will not fill.	<ul> <li>No water to machine.</li> <li>Overflow Switch</li> <li>Water Valve</li> <li>Water Level Switch</li> <li>Wire Harness</li> <li>Control Board</li> </ul>	<ul> <li>Check faucets</li> <li>Check for continuity across switch 4 to 5</li> <li>Check for continuity across valve solenoids. This is 24V valve, do not use motor test cord to check!</li> <li>Check continuity of pressure switch.</li> </ul>	<ul> <li>Turn on faucets</li> <li>Replace pressure switch if open</li> <li>Replace valve</li> <li>Replace pressure switch if necessary</li> <li>Replace wiring</li> <li>Replace board</li> </ul>
W. J. Ell.		(See schematic)  • Check for continuity from board output to valve coil	
Washer fills until the overflow switch disengages, level too high	<ul><li>Water Level Switch</li><li>Wire harness</li><li>Control Board</li></ul>	<ul> <li>Check continuity of pressure switch (See schematic)</li> <li>Check for continuity from the water level switch outputs to their board inputs</li> </ul>	<ul> <li>Replace pressure switch</li> <li>Replace wiring</li> <li>Replace control board</li> </ul>
Washer overflows	Water Valve	Turn control off. If the washer continues to fill, replace valve. See above.	Replace valve
Water levels are not right, washer agitates	<ul><li>Water level sensors</li><li>Control board</li><li>Wire harness</li><li>Wires switched</li></ul>	<ul> <li>Check continuity of pressure switch</li> <li>Check for continuity from the water level switch outputs to their board inputs.</li> </ul>	Replace pressure switch  Replace control board  Switch or replace wiring

#### CAUTION

Always disconnect power supply before making any continuity checks or resistance readings. Always use caution when doing voltage tests.

#### **Microprocessor Board Fault Codes**

- F1 in display indicates Board Failure (lid circuit). Inoperable. Replace microprocessor board.
- F2 in display indicates Water valve thermistor sense failure (too low). Operative.
- F2 in display indicates Water valve thermistor sense failure (too high). Operative.
- F4 in display indicates Board Failure (level circuit). Inoperable. Replace microprocessor board.
- F9 in display indicates low voltage. Operative.

Fault codes F1 & F4 will be displayed when the failures occur, while F2, F3, and F9, if present, can only be viewed after a key sequence of OFF and while holding OFF actuate SLOW SPIN for 2 seconds. After the entire display turns on then off, the code will be displayed. To re-test the water valve failure, water must be run in the machine. If F2 or F3 occur, the machine will default to both water valves on during the Warm temp, 50% more hot water for Energy Hot and 50% more cold water if Energy Warm.

To implement the lid switch test for welding, the lid must be opened between programs. If this does not occur, "lid" will appear in the display when the next program is selected. This must be cleared by lifting the lid before a program can be selected. If opening the lid does not clear the "lid" from the display the assumption is that the lid switch is welded. The test does not occur if the cycle is ended by the pressing of the OFF-KEY, only if the cycle ends naturally.

#### **DISPLAY DIAGNOSTIC:**

The display can be viewed with all segments on for 4 seconds after a key sequence of OFF and while holding OFF actuate Pause for 2 seconds to activate.

## **ELECTRICAL - MECHANICAL TROUBLESHOOTING**

#### CAUTION

Always disconnect power supply before making any continuity checks or resistance readings. Always use caution when doing voltage tests.

## Washer Will Not Fill (Timer Model).

Check to make sure water faucets are turned on.

- Is washer plugged into power supply?
- Pull out timer knob.
- Push water temperature selector button.
- Check for blown fuse or tripped breaker.
- Check fuse on lid switch assembly. If failed, check lid switch for proper operation.
- · Check timer line switch for continuity.
- Check water level switch for continuity between terminals 7 and 15. No continuity, replace switch.
- Check timer.

## Washer Will Not Fill For A Specific Water Temperature Selection

Select temperature control to determine which water temperature is not available (hot or cold).

- Check to make sure water faucet is turned on.
- Check for continuity on water valve solenoid(s).

#### Will Not Agitate, Burns Belt

#### **Burned pump belt:**

- Remove pump belt and turn pump pulley by hand.
- If pump pulley will not turn, check for an object stuck in pump.
- If no object is found, pump is seized, replace pump.

#### **Burned drive belt:**

- Check pump belt adjustment by pulling motor forward so drive belt is tight. Grasp the pump belt in the middle and with the belt tight there should be 1/4" between the inside surfaces of the pump belt.
- If not, adjust by moving the pump.
- · Check for binding motor carriage.
- If binding, clean upper and lower tracks. Replace glides, springs and lubricate.
- Remove drive belt and turn large drive pulley by hand counterclockwise (looking at it from the bottom).
- If pulley will not turn, the transmission is locked and will need to be serviced.

#### - CAUTION -

Always disconnect power supply before making any continuity checks or resistance readings. Always use caution when doing voltage tests.

### Will Not Agitate - Motor Is Running

- Check to make sure drive belt is on.
- Check to make sure motor pulley turns freely or has not fallen off.
- Remove drive belt. Turn drive pulley by hand counterclockwise (looking at it from the bottom).
- If it rotates freely, but still will not allow agitator to oscillate, the transmission will need to be serviced.

## Will Not Agitate On Delicate Cycle, Fabric-Matic Models

 Delicate cycle consists of brief periods of agitation and soaks. Refer to schematic.

#### **Washer Overflows**

- Unplug washer.
- If washer continues to fill, replace water valve.
- Should washer stop filling, proceed on.
- Blow into the water level switch orifice until a clicking noise is heard.
- Retain air pressure and check continuity on switch terminals between 7 and 16.
- No continuity, replace water level switch.
- Examine air dome hose for leaks.
- Check for obstruction blocking the air dome orifice in the outer tub. Remove object.

#### No Cool - Down Fill

- Will washer fill with cold water for wash?
- If washer will not fill with cold water for wash, refer to "Washer Will Not Fill".
- Check timer for continuity as shown on schematic.

## Hot and Cold Water Temperatures Reversed

- Check for reversed water inlet hoses.
- Check for incorrect wiring of water temperature switch, timer and water valve.

#### Slow Fill

- Make sure water faucets are completely turned on.
- Check for restricted screen in water valve or inlet hose.

## Washer Will Not Fill For Rinse Cycle

- Check to see if washer will fill with warm and cold water for wash setting.
- If washer will not fill for wash refer to "Washer Will Not Fill".
- Check timer for continuity as shown on schematic.
- Check water temperature switch for continuity between terminals shown on schematic.

Always disconnect power supply before making any continuity checks or resistance readings. Always use caution when doing voltage tests.

## Fills With Water But Will Not Agitate

- Check water level switch for continuity between terminals 7 and 16. No continuity, replace switch.
- Check timer as shown on schematic.
- Attach motor test cord to drive motor (refer to Electrical Test Equipment section). If motor will not operate with test cord, replace motor.
- Check speed switch on 2 speed models.

## Agitates Continuously - Timer Will Not Advance

- Check timer motor. If timer motor is not operating, replace.
- Timer motor runs but timer will not advance. Replace timer.

### Will Not Spin

- Will washer fill with water? No.
   Check to see if washer is plugged into power supply.
- Check timer line switch.
- Will washer agitate after fill? No. Check lid switch.
- Check water level switch for continuity between 7 and 16.
- Check timer, refer to schematic.
- Check speed switch on 2 speed models.

## QUICK REFERENCE TROUBLESHOOTING

#### CAUTION -

Always disconnect power supply before making any continuity checks or resistance readings. Always use caution when doing voltage tests.

#### **WILL NOT FILL**

- 1. Check: Voltage at outlet
- 2. Check: Voltage at mixing valve

#### No Voltage:

- 1. Check voltage at water level switch
  - a. No Voltage
    - Timer contacts
    - Power Cord
  - b. Voltage OK
    - Timer contacts
    - · Water selector switch

#### Voltage OK:

- 1. Faucets open
- 2. Hose screens clogged
- 3. Hoses kinked

#### FILLS, WILL NOT AGITATE

#### **Motor Runs:**

- 1. Check for broken belt
- 2. Check to see if mount slides freely
- 3. Check for transmission problem

#### **Motor Will Not Run:**

- 1. Check if pump is jammed
- 2. Check Timer
- 3. Check Motor Starting Switch
  - Check motor with test cord
- 4. Check water level switch
- 5. Check speed selector switch

#### BASKET REVOLVES DURING AGITATION

#### Check:

- 1. Brake stuck
- 2. Drive pulley adjustment
- 3. Drive lug adjustment
- 4. Motor/Timer wired correctly

#### CAUTION -

Always disconnect power supply before making any continuity checks or resistance readings. Always use caution when doing voltage tests.

#### TIMER NOT ADVANCING

1. Check voltage at timer motor

#### No Voltage:

- 1. Check Agitation Cycle
  - Timer contacts
  - Water level switch
- 2. Spin Cycle
  - Timer Contacts

#### Voltage OK:

- 1. Timer motor
- 2. Timer

#### **WILL NOT SPIN**

#### **Motor Runs:**

- 1. Check for belt broken or slipping
- 2. Clothing stuck between tubs
- 3. Spin Bearing
- 4. Binding tub bearing
- 5. Binding tub cover
- 6. Brake assembly not disengaging

#### **Motor Will Not Run:**

- 1. Door Switch
- 2. Water Level switch
- 3. Speed selector switch
- 4. Timer contacts
- 5. Pump jammed
- 6. Motor Protector switch
- 7. Power supply
  - · Check motor with test cord

#### **NOISY AND/OR VIBRATION**

- 1. Check for proper installation
  - a. Pump Bearings
  - b. Motor Bearings
  - c. Lower Bearing
  - d. Suspension Springs

#### In Agitation:

- 1. Agitator loose
- 2. Check for pump belt loose
- 3. Transmission

#### In Spin:

- 1. Spin Bearing
- 2. Tub Seal
- 3. Inner Tub loose

#### CAUTION -

Always disconnect power supply before making any continuity checks or resistance readings. Always use caution when doing voltage tests.

#### WILL NOT PUMP OUT

- 1. Check for motor running in spin direction
  - a. Drain hose height OK?
  - b. Drain hose restricted?
  - c. Pump turning freely?
  - d. Pump impeller broken?

### **CLOTHES WET AFTER SPIN CYCLE**

1. Check with weight

#### Spin OK:

- 1. Pump not operating
- 2. Drain hose restricted
- 3. Drain plumbing restricted
- 4. Unbalanced clothes load

#### Slow Spin:

- 1. Belt Slipping
- 2. Tub Seal Binding
- 3. Spin Bearing Bad
- 4. Brake Assembly binding

#### **WATER LEAK**

- 1. Pump
- 2. Drain Hoses
- 3. Water Mixing Valve
- 4. Tub Top Gasket
- 5. Inlet hoses
- 6. Siphon Break
- 7. Tub Seal
- 8. Bleach hose
- 9. Water inlet flume

# ELECTRICAL-MECHANICAL TROUBLESHOOTING (1997) DEPENDABLE CARE

(For more detailed checks of these and other conditions refer to service manual part no. 16001145, Section 2.)

#### **General Information**

The malfunction of an electrical circuit cannot easily be diagnosed unless you first understand how it functions when operating normally.

#### Components

There are two basic categories for electrical components, switches and loads.

A switch controls the current path to a load component. Door switches, water level switches and relays are examples of switching components.

An electrical load uses electricity to perform some function. Motors convert electricity to magnetic fields and then to mechanical motion. Solenoids use magnetic fields to push or pull. Lamps convert electricity to light.

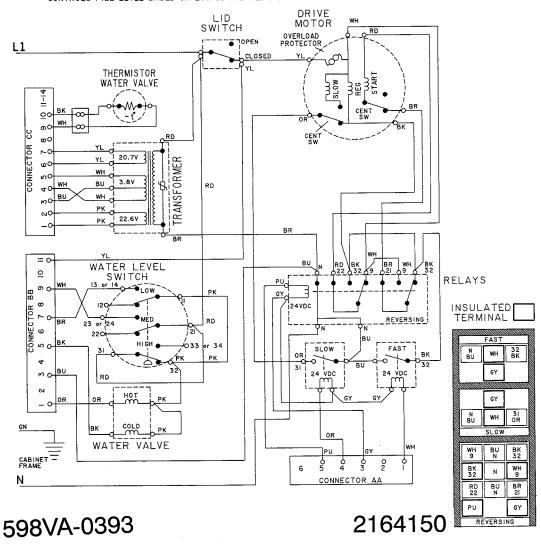
The schematic wiring diagram is followed much like a road map. The lines represent the wiring connections between components. Connections in the wiring are indicated by a small dot. If the lines cross but no dot is present at the intersection, there is no connection. As much as possible, switches are shown in their normal position electrically without actuation.

## SECTION 5. ELECTRICAL CIRCUITS / SCHEMATICS

### **LAT9904**

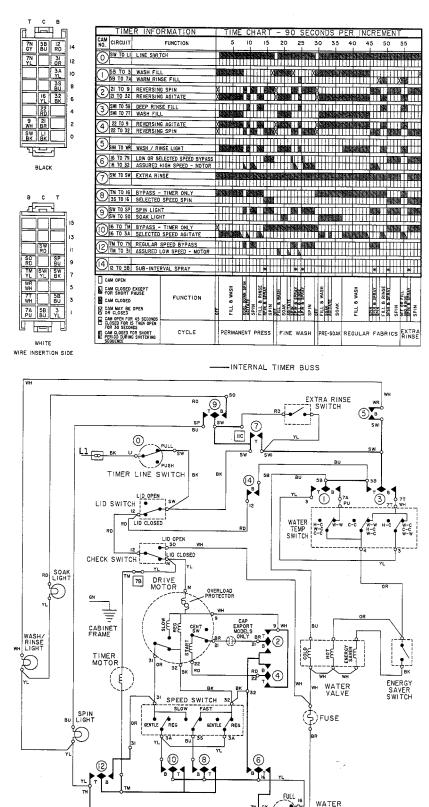
FUNCTION	CONTACTS	REGULAR AGITATE	GENTLE AGITATE	FAST SPIN	SLOW SPIN
REVERSING RELAY ENERGIZED	RD TO BK BR TO WH				
REVERSING RELAY NONENERGIZED	RD TO WH BR TO BK				·
FAST RELAY ENERGIZED	вк то ви				
SLOW RELAY ENERGIZED	OR TO BU				
FUNCTION	CONTACTS	EMPTY	LOW (I)	MED (3)	HIGH (5)
	II TO 13 or 14				
WATER LEVELS	21 TO 23 or 24				
SEE FOOTNOTE I	31 TO 32				

I. FOR INTERMEDIATE WATER LEVELS (2) AND (4), COMPUTER AUTOMATICALLY CONTROLS FILL LEVEL BASED ON LOW (I) AND MED (3).



Refer to wiring diagram supplied with unit before attempting service.

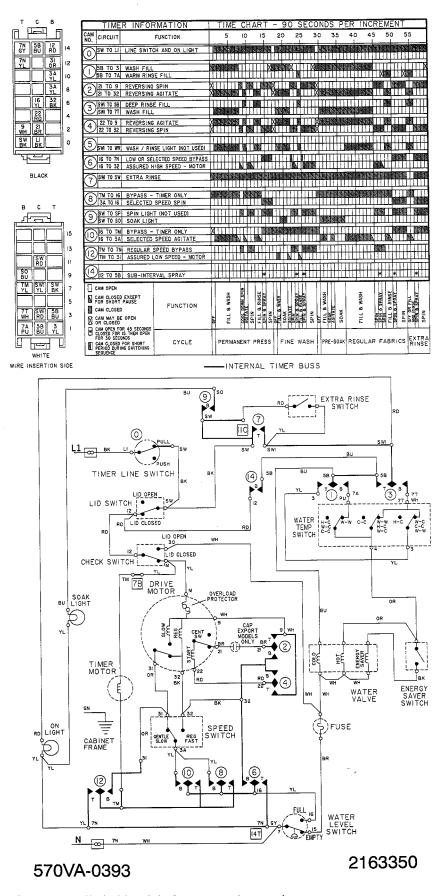
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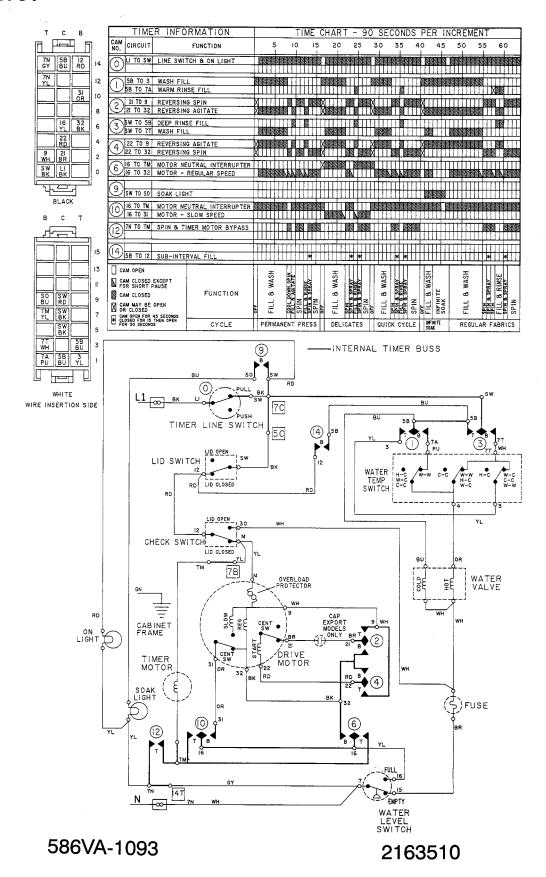


Refer to wiring diagram supplied with unit before attempting service.

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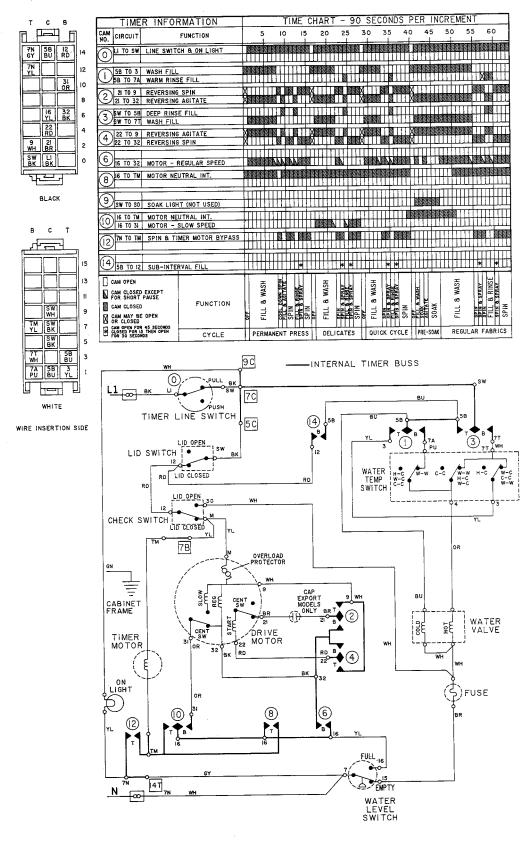
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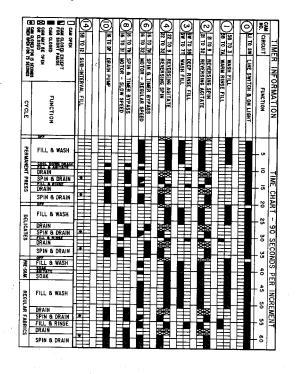
### LAT9714, LAT9704

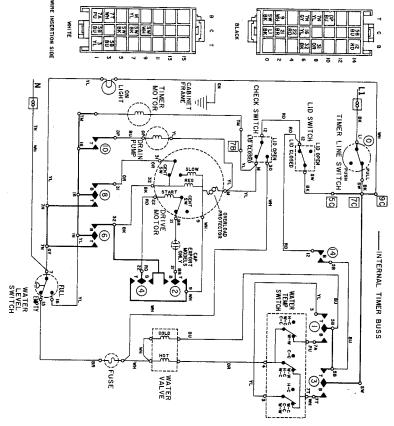


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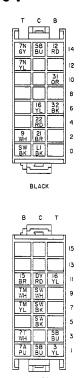




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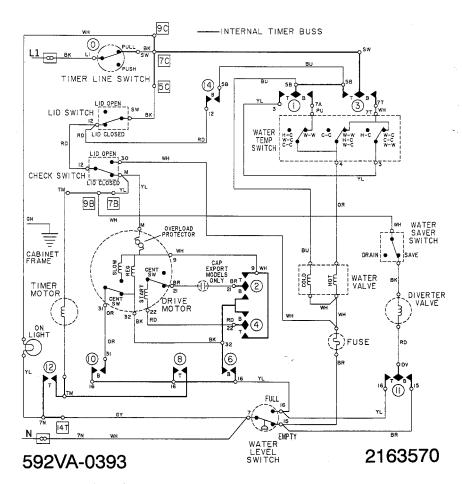
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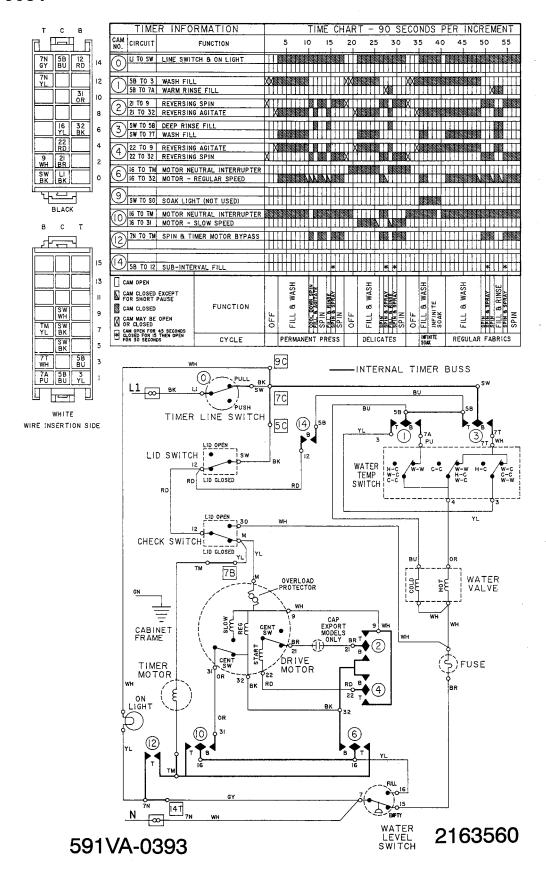
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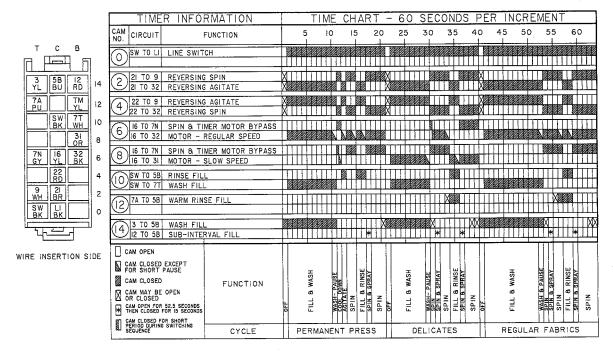


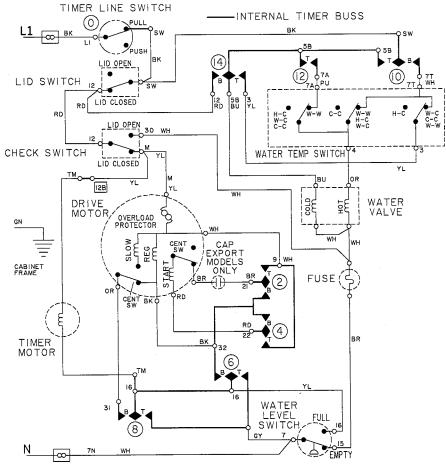
WIRE INSERTION SIDE

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3 SW TO 58 DEEP RINSE SW TO 7T WASH FILL											Ш	Ш				
4 22 TO 9 REVERSING AGITATE 22 TO 32 REVERSING SPIN						X II										
6 16 TO 32 MOTOR - REGULAR SPEED																
8 6 TO TM MOTOR NEUT	RAL INT.															
10 16 TO 31 MOTOR - SL	OW SPEED		${\mathbb H}$		$\blacksquare$					Ш	Ш	$\mathbb{H}$	Ш			
DV TO 16 SUDS SAVE DV TO 15 SUDS RETUR	N	Ш	Ш		$\blacksquare$			Ш	₩		Ш					Ш
12 7N TO TM SPIN & TIME	R MOTOR BYPASS					$\mathbb{H}$			Ш					Ш		
14 58 TO 12 SUB-INTERV	AL FILL		Ш		*		*	*	Ш	*					*	*
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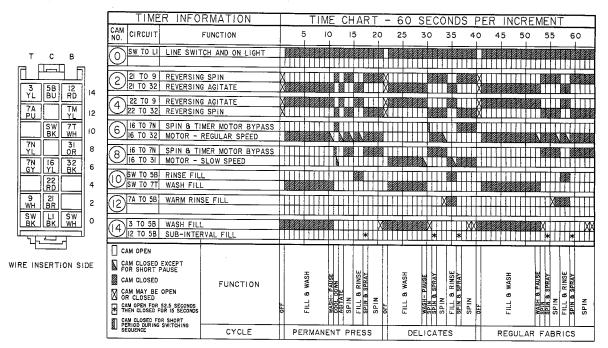


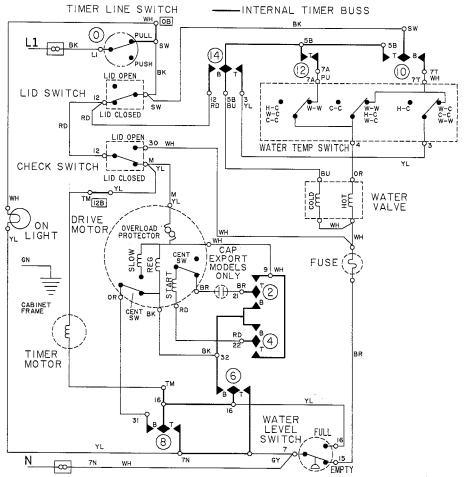


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### LAT9604, LAT8434, LAT8404

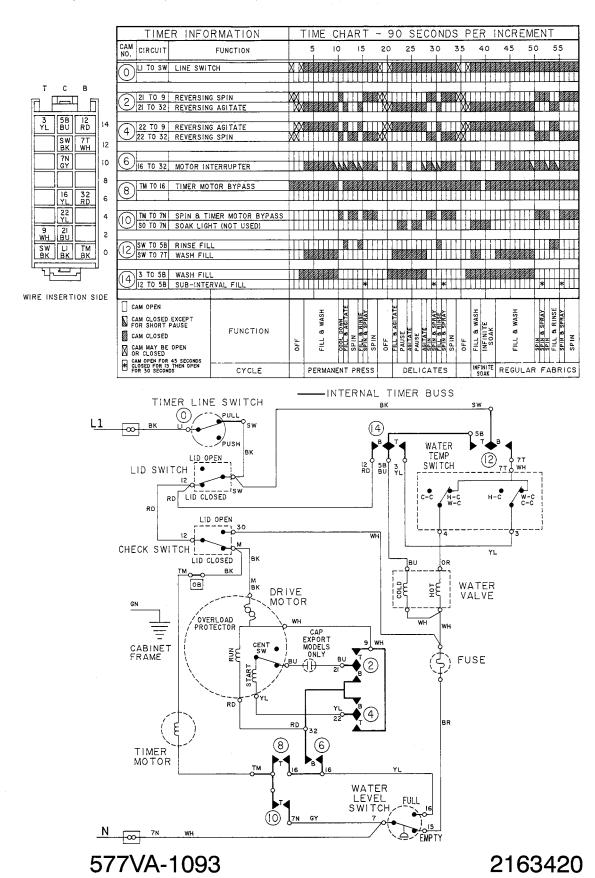




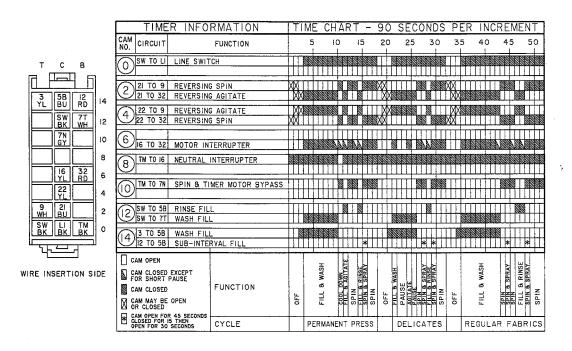
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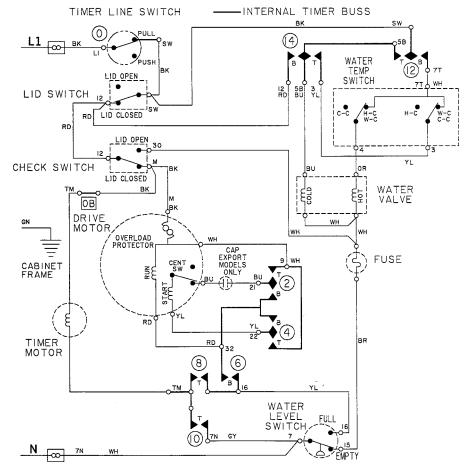
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### LAT9334, LAT8214, LAT8104, LAT8014, LAT7334, LAT2914



### LAT9314, LAT9304, LAT7314, LAT7304



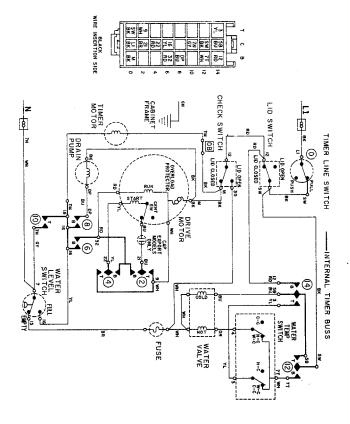


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### LAT9304AG\*, LAT7304AG\* (EXPORT)

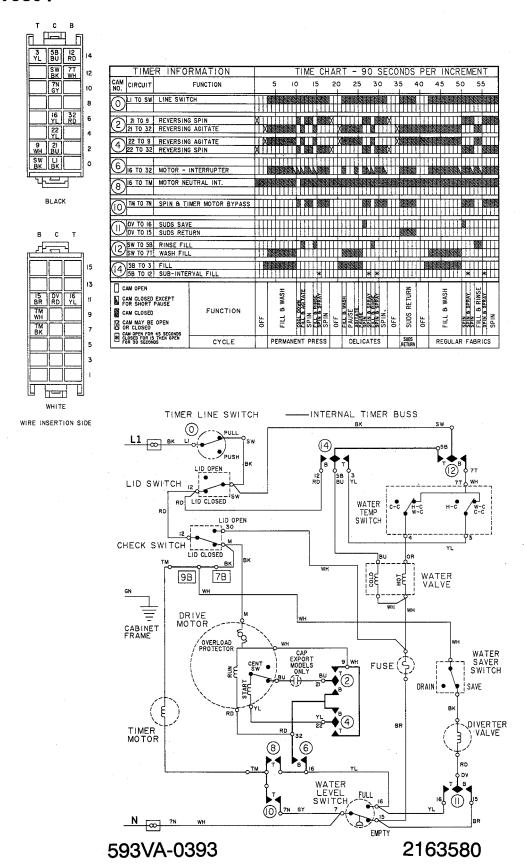
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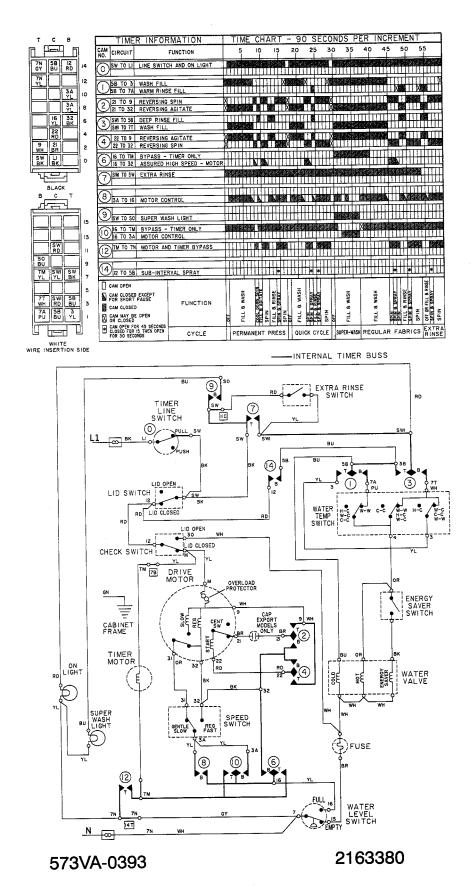


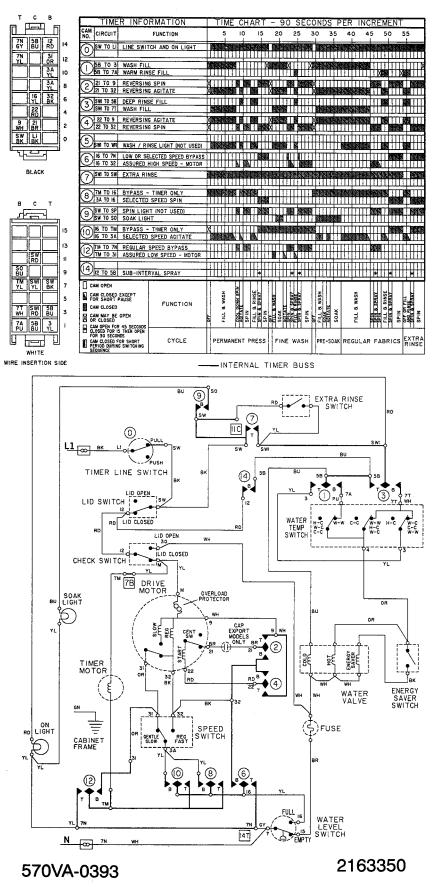
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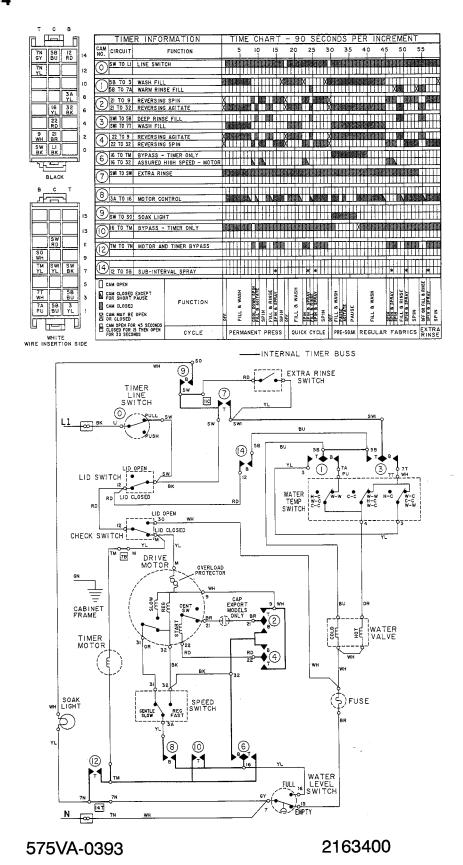
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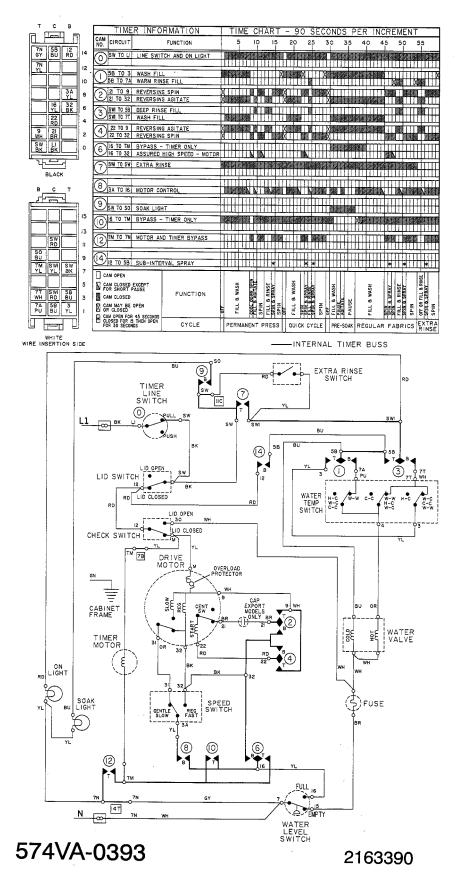
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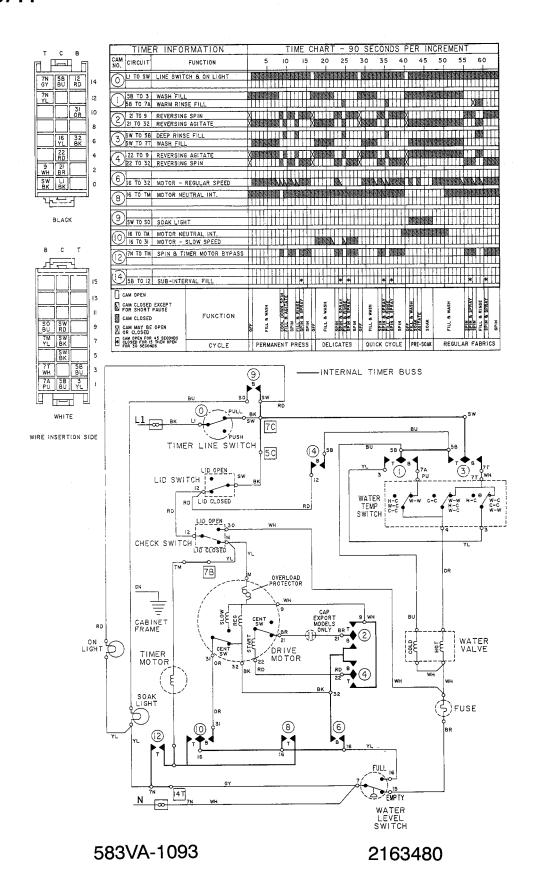




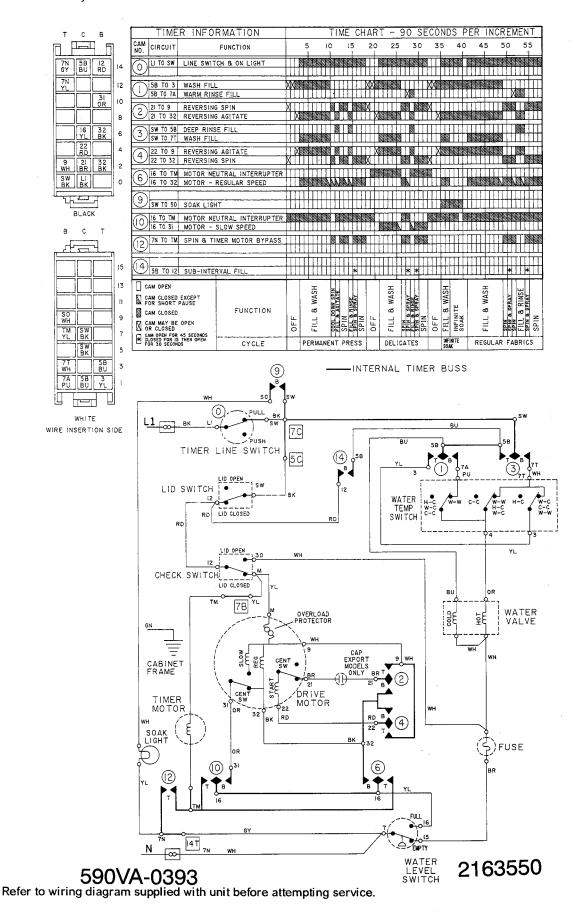




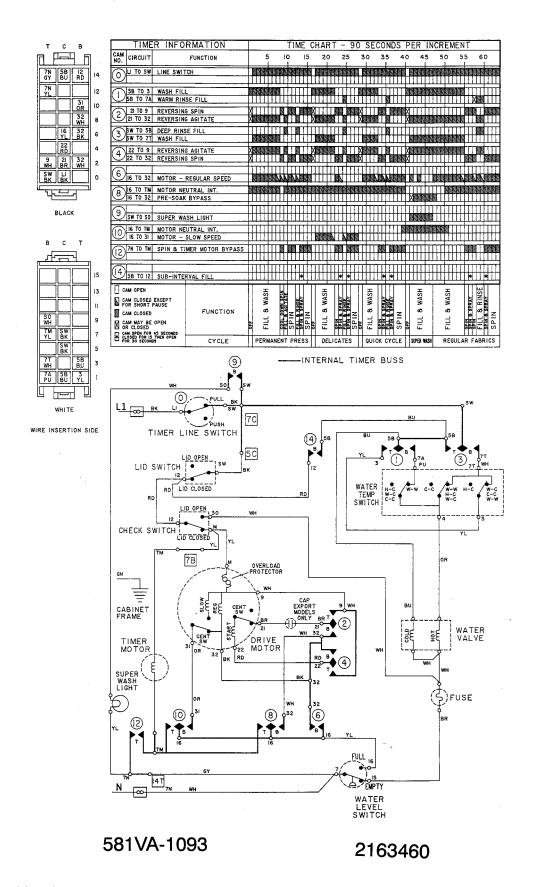


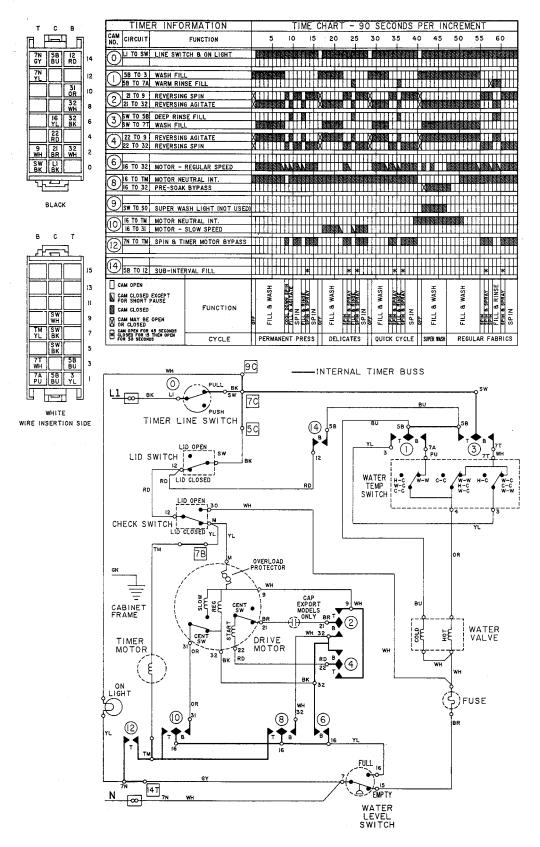


### LAT8704, LAT4914



5-20

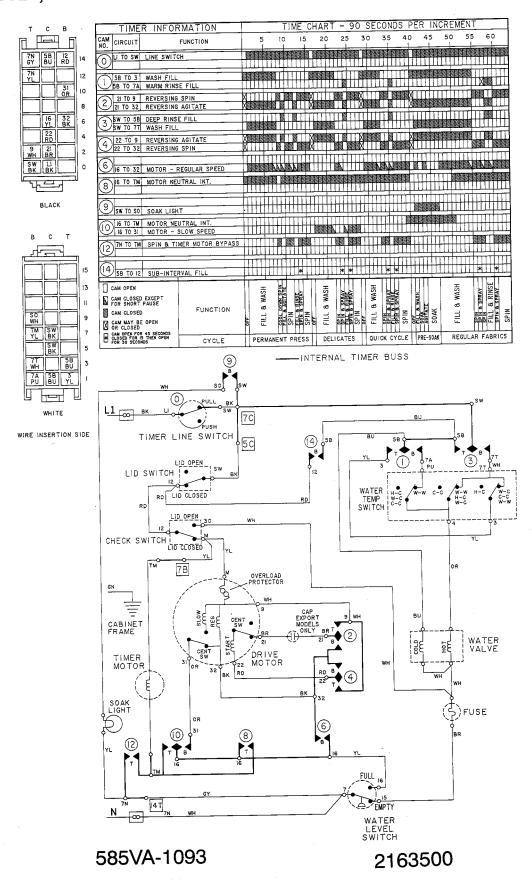




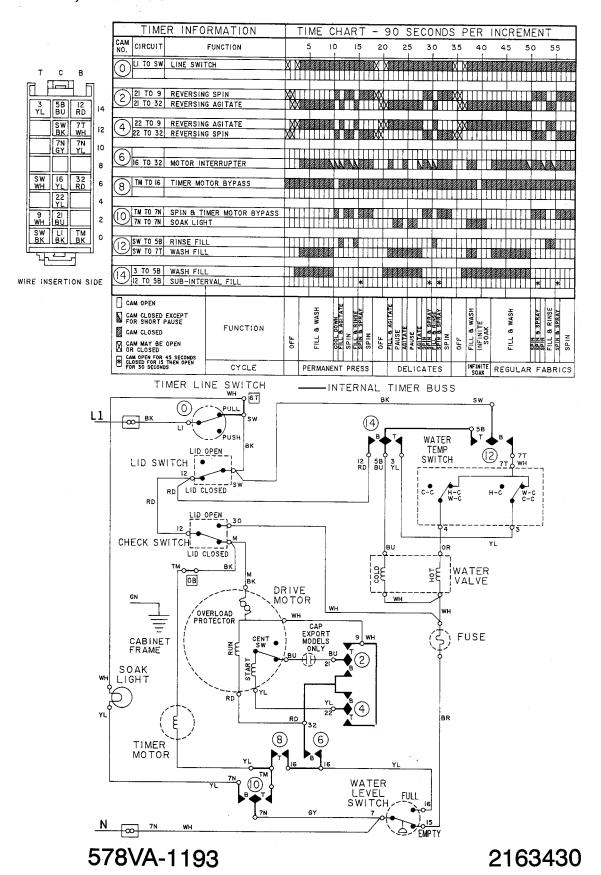
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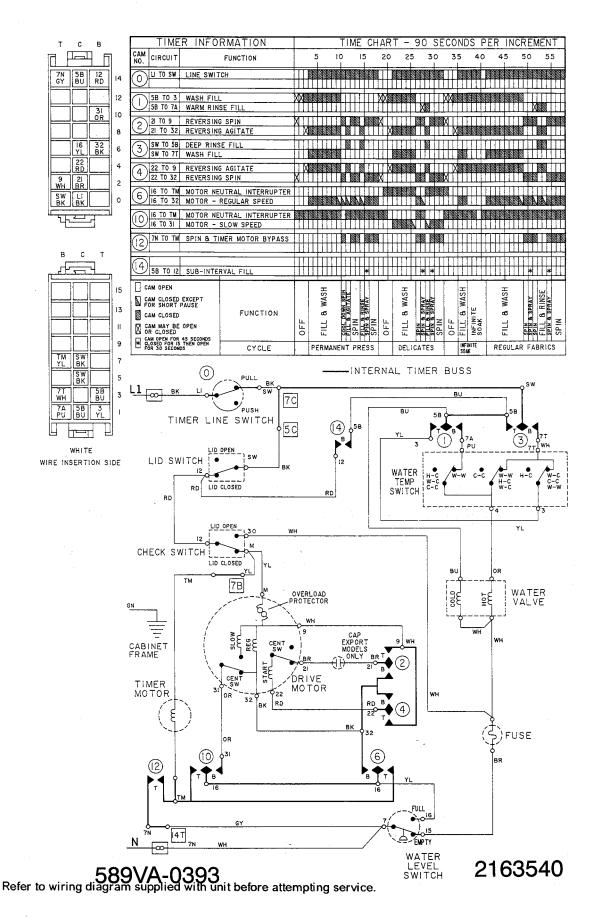
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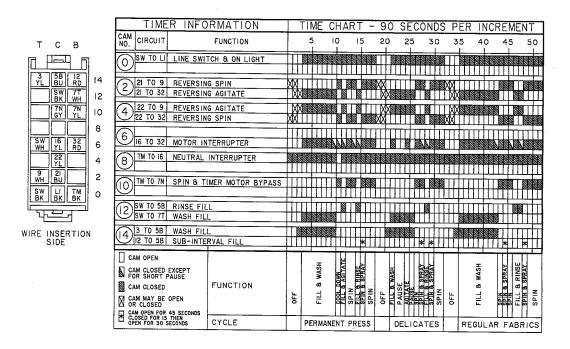
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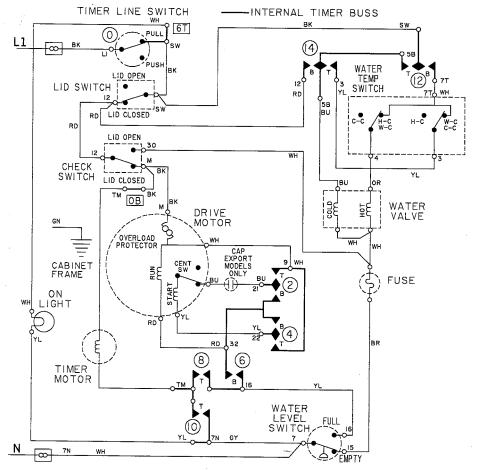


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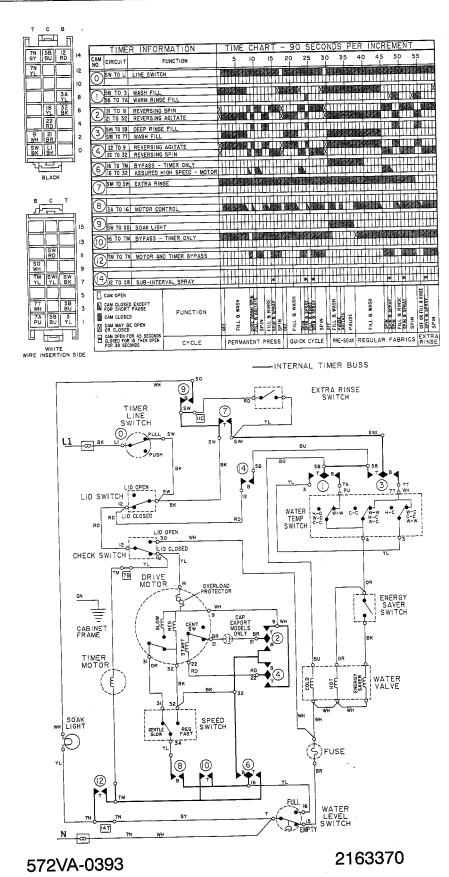
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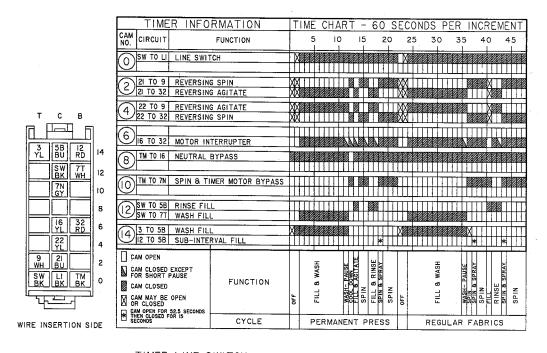


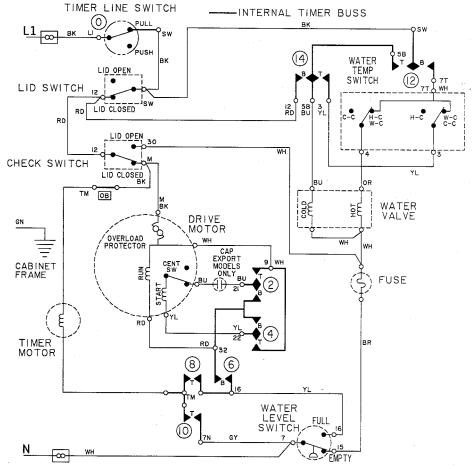
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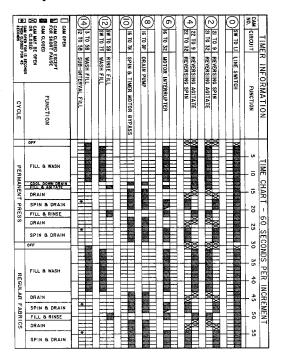


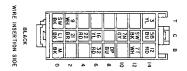


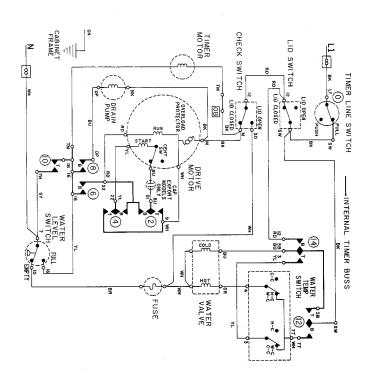
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### LAT5004AG\* (EXPORT)





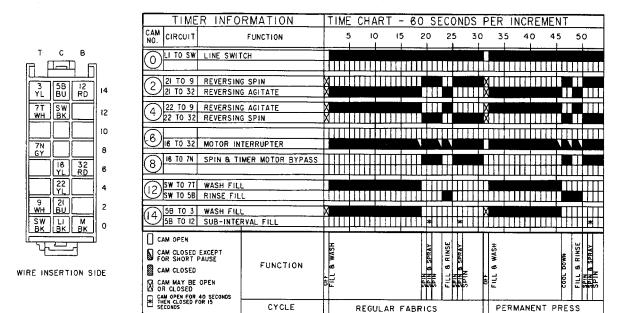


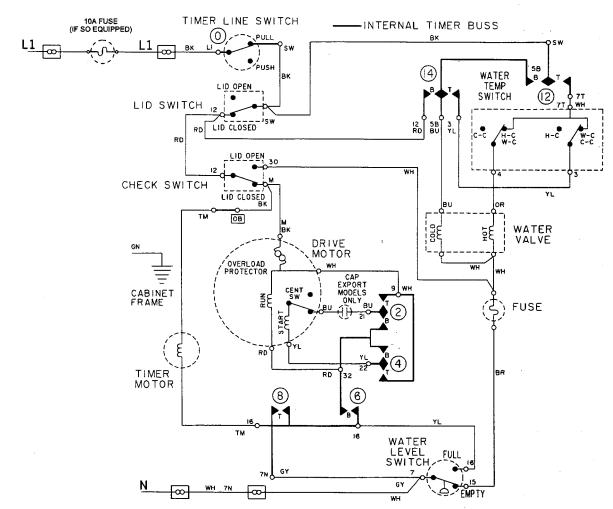
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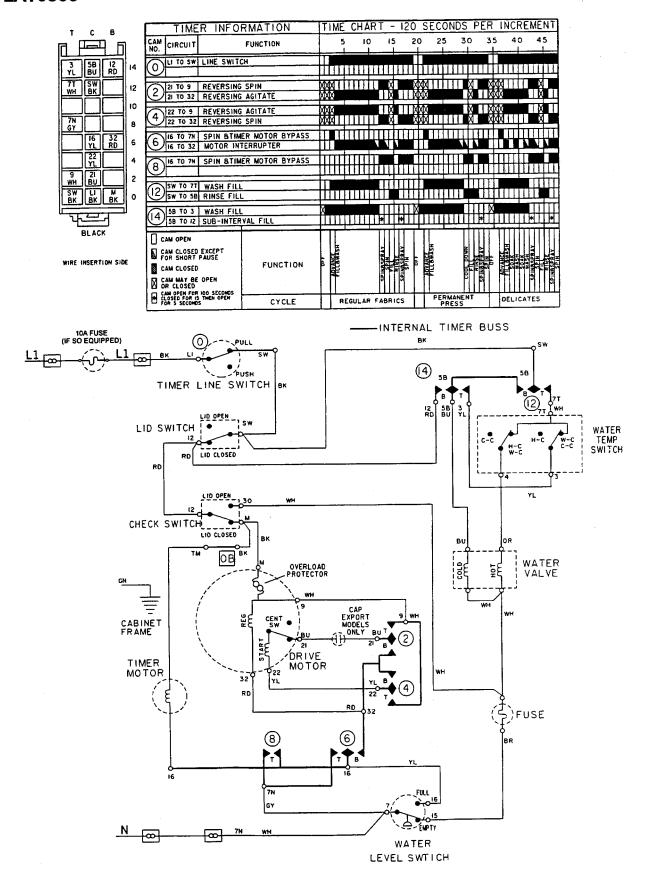
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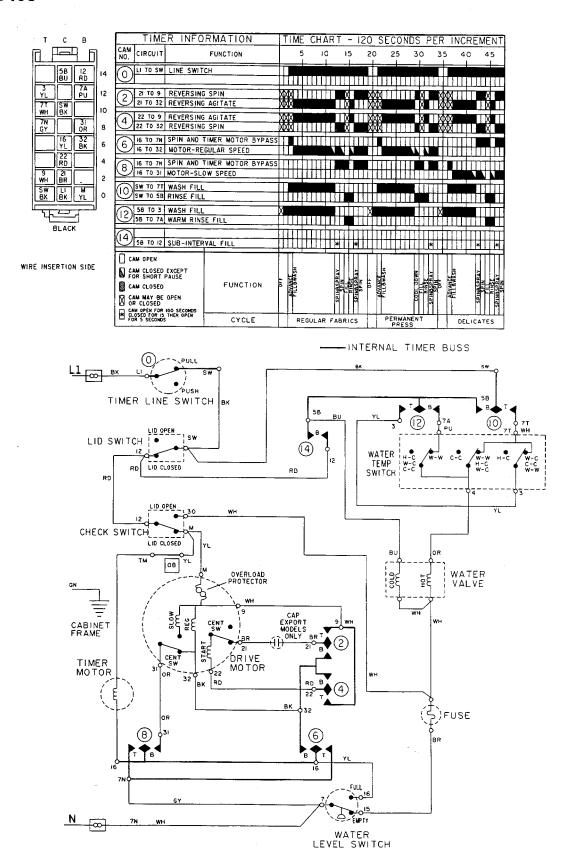
# **ELECTRICAL CIRCUITS/SCHEMATICS** (1997) DEPENDABLE CARE

#### LAT5006 • LAT9206

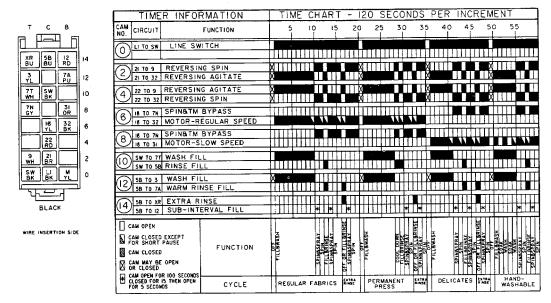


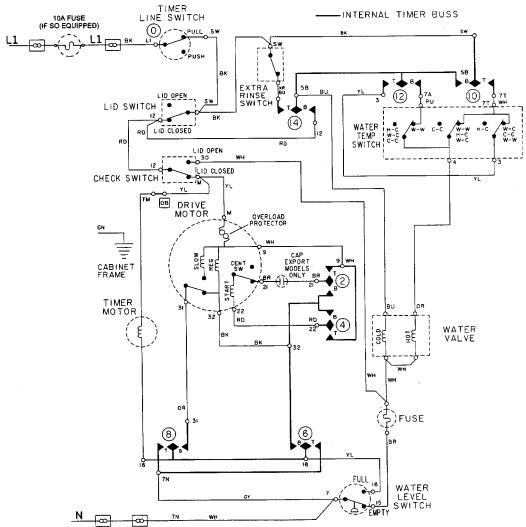


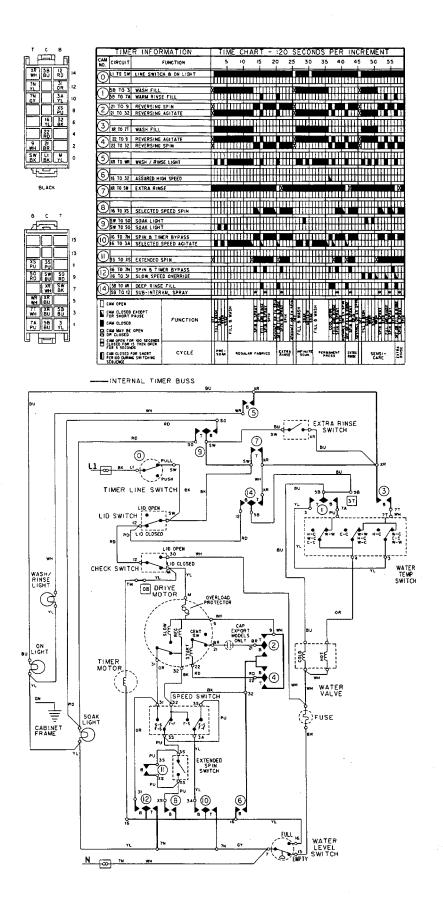


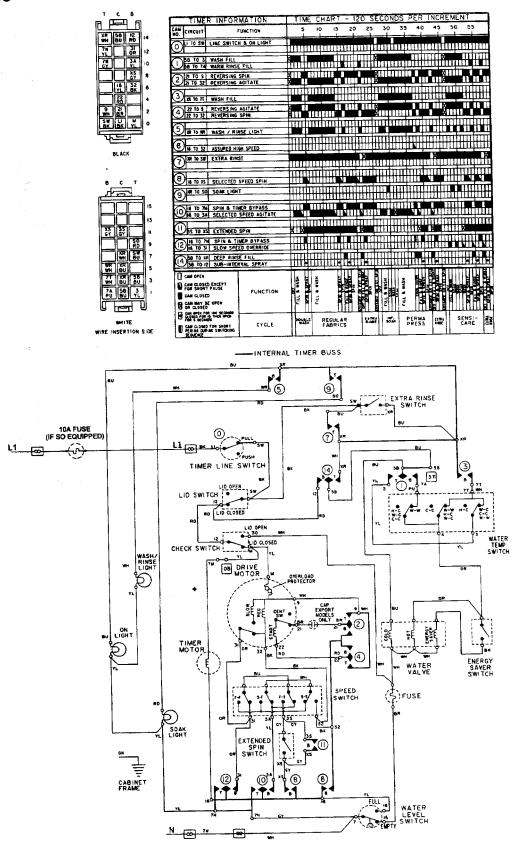


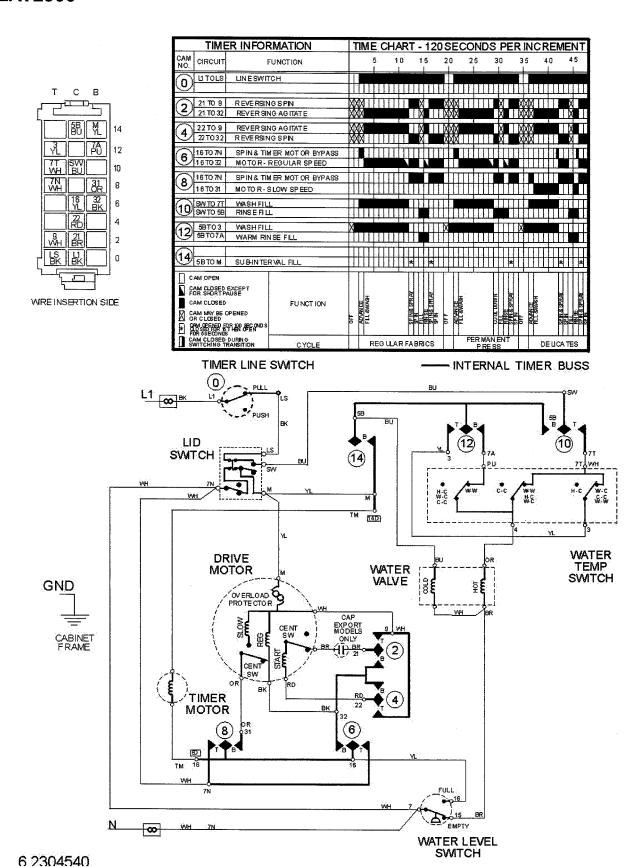
5-32



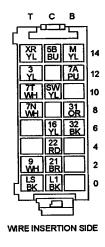






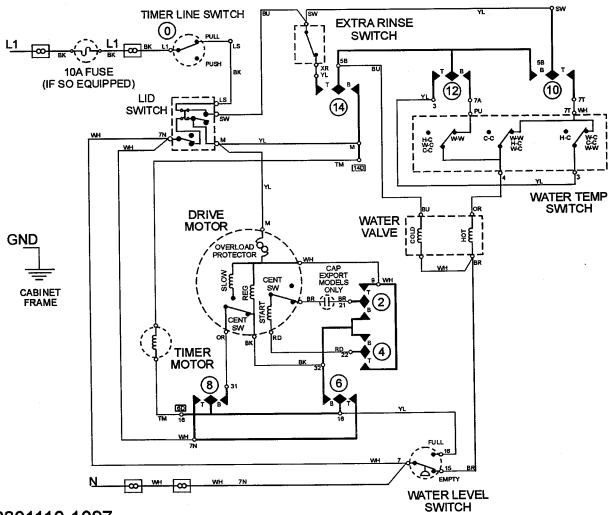


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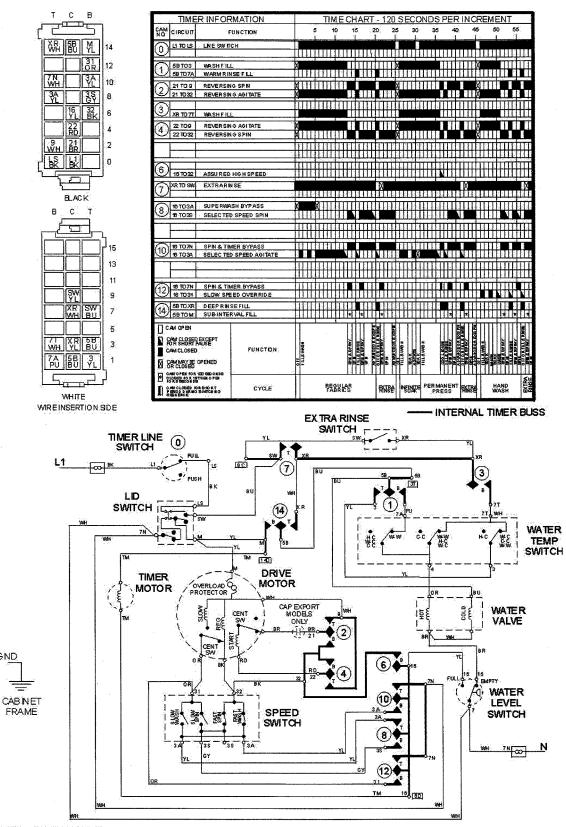


Г	TIME	RINFOR	MATION	Τ	TI	Μ	ΙE	Cŀ	ΙΑΙ	RT	- 1	20	s	EC	10	ID:	S F	E	₹!	NC	RE	ME	NT
CAM NO.	CIRCUIT	F	UNCTION			,	5 I	•	10	1	5	- 2	20	:	25 		30 		35 1		40 		15
0	L1 TO LS	LINE SWIT	СН	$\prod$	1	Ī						Ш			П		П	Ш			I		
2	21 TO 9 21 TO 32	REVERSIN REVERSIN	G SPIN IGAGITATE	X				П				H	X	Ш					X	Ш			
4	22 TO 9 22 TO 32	REVERSIN REVERSIN	igagitate G spin	X		I			I			Ш	X	Ш	Ħ		Ι		X	Ш			
6	16 TO 7N 16 TO 32		MER MOTOR BYPASS REGULAR SPEED					Щ		X	1			Ш		W				$\coprod$			
8	16 TO 7N 16 TO 31	SPIN & TIMER MOTOR BYPASS MOTOR - SLOW SPEED							11.						#		П				H	Ш	77
10	SW TO 7T WASH FILL SW TO 5B RINSE FILL						Π	Ш				$\prod$		Ш	П					Ш			
12	5B TO 7A	WASH FILL WARM RIN		X			Ι	Ш					X	Ш				Ш	X	Ш	I		
14)	5B TO XR 5B TO M	EXTRA RIN SUB-INTER		$^{\downarrow}$			壯	Ш		*	┨	*	#	Ш	#		×	*	+			Ш	* *
	AM OPEN  AM CLOSED  AM CLOSED  AM MAY BE  OR CLOSED	OPENED	FUNCTION		FILL & WASH				SPIN & SPRAY	FILL RINGE SPIN & SPRAY	NIMS	SOUND STANDAR	OFF.				SPINE SPRAY	SPIN & SPINSE SPIN & SPRAY	Na.	FILL & WASH	21000	SPIN & SPIN	SPIN & SPRAY SPIN & SPRAY SPIN & SPRAY
H ş	AM OPENED F ECONDS CLOS HEN OPEN FO	SED FOR 15 R 5 SECONDS	CYCLE	T	R	EG	UL	ARI	AB	RICS	3	EXTRA PINSE		PE	RM PR	ANE ESS	NT	EXT	¥	DE	LIC	ATES	

--- INTERNAL TIMER BUSS



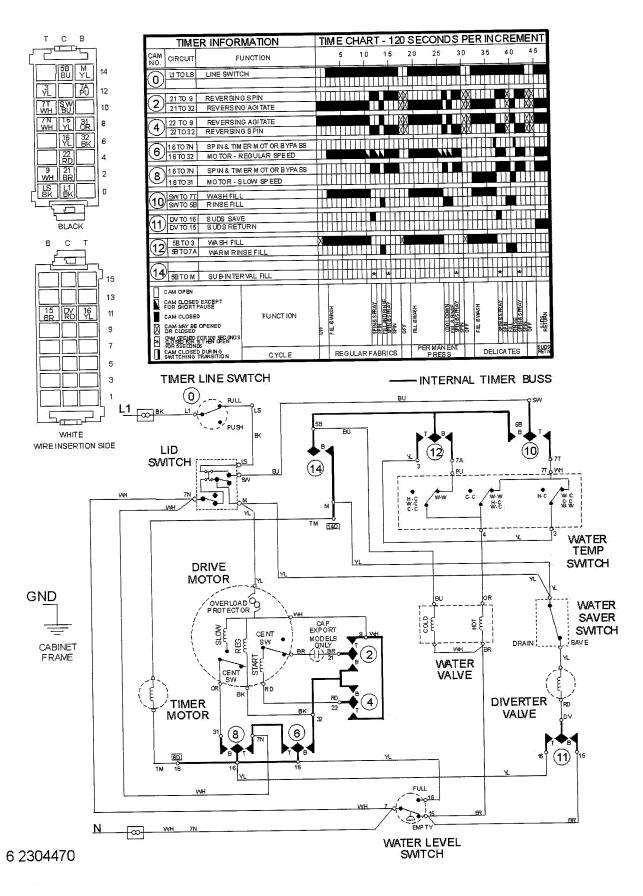
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#### **LAW2400**



## MAYTAG

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